

THE
NAVY SURGEON;
OR,
Practical System
OF
SURGERY.
WITH A
DISSERTATION
ON COLD and HOT
MINERAL SPRINGS;
AND
Physical Observations
ON THE
COAST of GUINEA.

By JOHN ATKINS, SURGEON.

Quam quisque norit artem in hac se exerceat.

LONDON:

Printed for HENRY WOODGATE and SAMUEL BROOKS,
at the Golden Ball in Pater-Noster-Row. MDCCLVIII.

THE
NAVY SURGEON;
OR,
Practical System
OF
SURGERY.
WITH A
DISSERTATION
ON GONORRHOEA
MINERAL SPRINGS;
AND
Physical Observations
ON THE
COAST OF GUINEA.

B. JOHN NIXON, SURGEON.

Author of "The Art of the Surgeon."

LONDON:

Printed for Henry Woodcock and Samuel Hooper,
at the Golden Ball in Pall-Mall, near the Theatre.



THE
PREFACE.



R A D E and *Luxury* has introduced among us many *Distempers*, that in times of religious *Temperance* were unknown; a *Refinement* in *Taste* shortning *Life* and lessening the *Pleasures* of it.

The Dietetick Part of Medicine, with the Experience of a few Herbs, Charms, and Fetishes, was all the ancient Physick; the Ægyptians first, and then others, putting their Lame and Sick at the Doors, whereby Passengers who had preserved an Analogy of the Case, imparted their Advice. And it is a Reverence to something like it, and a happy Ignorance in the Means of Intemperance, that preserves still a so much better State of Health among Negroes and Indians than most Europeans.

Natura curat acutos tempusq; Chronicos.

A Regard to Diet, that it be sparing of easy familiar Digestion, and not hard to come by, is with

The P R E F A C E.

the other * Non-naturals, *the usefullest Part, operating with more Constancy and Certainty than a blindfold Prescription among Drugs our Constitutions are Strangers to. Artfully administer'd they may do no Harm ; but Unskilfully or Intemperately, may turn the Stomach and keep it so. Not all the nauseating Loads taken in London, exclusive of Surgery, diminishing to my Belief the Bills of Mortality a single Person in the Year.*

Physick when it stands practised as a Branch of Traffick, has less regard to Health ; "He that seeks it least is most a Friend." More are really or fantastically Sick, than in Towns or States without Trade ; and here may be admired the great Capacity of Merchants that could bring it into Fashion, because of the Antipathy it struggles with ; but such is their Art, that when Importations are beneficial, Diet and Dress too submits to their Rule, Thousands formerly afraid, now make it a grand Part of their Amusement.

Hence were Colleges † and Halls instituted, that every one might deposite their Nostrum as in a publick Stock, and some of the learnedst Men in the Nation, in Succession dignified and dressed to imploy their Talents
more

* These Non-naturals are Six ; *Air, Meat and Drink, Motion and Rest, Watching and Sleeping ; the Passions and Excretions and Retentions.* — Called so, because they are neither of nor against Man's Nature ; and yet, without their Use humane Life cannot subsist. Nor happily but in their Regularity ; for in the Quantity, Quality, Manner, and Time of using them, consists the Method in a great Measure of preserving and restoring Health.

† The Physicians were Incorporated with us in King Henry the Eighth's Time. Thirty *Fellows* only to the Restoration : Now Fourscore or more, and Licentiates innumerable.

Apothecaries were separated from the Grocers ; and Incorporated 1617.

The P R E F A C E.

more effectually in Writing, Talking, and agreeable Address, to quicken and enlarge People's Tastes, Lingua potentior Armis. Nor can it be said they have been backward; Scammony, Mercury, &c. coming to us now in Tuns, that was heretofore in Pounds; Wine in Quarts, that used to be in Quarters. Directors know the Use of these Members in Society, and load them with Fees and Praise to provoke Imitation. If they labour under no Disorder themselves, frame some among the useless Part of their Families to add the Pride of Attendance. Many of these are found in the best Streets in Town; or at Spaws, and may be called State Patients, laying by to adorn the Fashion of the Season; the Expence is nothing, for the faster the Joke takes, the more Rhubarb and Assa-fætida is expended.

However, I am far from thinking those Gentlemen undeserving of their Fees, they have as much right to profit by their Learning as a Merchant by his Goods; they keep an enormous Catalogue from doing harm.

The Clergy here lend also a helping Hand, by railing with Delicacy at the Sins which promote Business; Dependent Presbyters and Lecturers gaining Esteem from a better Knowledge herein, should they declaim in and out of Season, so as to be minded, they know it would considerably abate of their Easter Offerings and Subscriptions. Dress and Abstinence alone, were they to descend upon the Bulk of our Country Men with the same certainty Taxes do, would be a great Preservative against all Cheats, and Injuries of Trade; but sumptuary Laws would spoil the Sale of Silks and Velvets, Religious Fasts, and Abstemiousness that of Wines, Spice, &c. instead therefore, it is found more convenient by Prohibitions,

The P R E F A C E.

bitions, Duties, and Fashions, to tell the People what they shall eat and drink, and wherewithal they shall be cloathed.

Multitudes might still be happy were there only a little Regulation; none permitted unless those of Distinction, or who pay considerably to the Parish-Rates, to take any Physick, except a Purge, a Vomit, or a Sweat, now and then, and when really wanted; but alas! in room of this, they that never eat a Bit of Venison in their Lives, by Mercantile Skill, are so infatuated with Pride and Example, not to let one another leave a vexatious Life without the same uncooth Ceremonies with their Betters.

Tom Tinker, nor Tom Taylor now, dare not let their Wives die but in Form; Bleeding, Vomiting, Bolussing, and Blistering from Head to Foot; though the rest of the Family at the same time may be wanting Bread, and the Master in Danger of a Prison for his Politeness. He is considering under all his Care that according to the Rule of Business, the Advantages in a second Match, very much depends on a creditable Behaviour in the first; and all Women commend this last Care above any other Toil. He did all for his poor Wife that could be done.

As Medicine has increased with Vice and Navigation, so together with Gun-Powder, Ambition, and bad Politicks, Men are helped to more broken Bones than formerly, and enlarged the Surgeons Practice; a Branch that has the Preference of others, either in respect to Antiquity, Reputation, or Usefulness. Abel we read was wounded, and the World in its Infancy full of Violence; (Gen. vi.) which implies at least, broken Heads, and something put to them. Chyronia and Telephia were Names for Ulcers, long before

THE PREFACE.

before Hippocrates and Galen, the Fathers of Physick. For Reputation the Trojan and Grecian Princes have added to it, who we are told, understood Surgery; and never went to their Wars without a Box of Salves. And lastly, as to Usefulness, the Benefits are visible, Patients being often fated to Lameness and Deformity without it.

The Parts of Surgery are Synthesis, Diæresis, Exæresis, and Prothesis, a Reuniting, Dividing, Extracting, or Adding; to these Sennertus adds a fifth Diorthosis, intortæ & compressæ correctio. Whatever is wild or irregular in humane Nature, standing corrected and amended by this Art; so very curious in some Operations, that I cannot think even those who deem all others unworthy honourable Epithets (the Quakers :) would yet not scruple the Style and Title of Excellency here.

What of Physick may relate to these Intentions, in my Opinion, is neither very ample nor mysterious; laying chiefly in knowing the different Secretions of the Body, whether too copious or defective; and which one or more of them, by promoting or stopping, will best serve the End aimed at; an alleviating and removing the Pains and Accidents our Nature is liable to in Wounds, Fractures, or other Disasters, and the timely use of them; so that separating Medicines of sensible Operation, opiates. Restrictives and Cordials we seem to have all here that is wanted; and perhaps two or three Specificks added to a thorough Knowledge in the Non-Naturals, would be enough in other Cases. If I have transgressed this Rule in the Navy Surgeon, it has happened through Compliance with Custom; one tenth Part properly chose, answering as well, if not a better Purpose than the whole.

Anatomical Skill is more the Surgeon's Part; Practice without, being lame and imperfect. This

The P R E F A C E.

teaches him to open Tumors, or make Incisions when requisite, according to the rectitude of Fibres, and not transverse; which might bring on troublesome Accidents. Aquapendente instances three Cases, where for want of this Caution, and cutting the thin Muscles of the Eye-brows and Eye-lids transverse, they immediately fell. By this also he judges, what principal Bowel is in the Cavities are wounded. What Accidents they, or the dissimilar Parts in Limbs are liable to; and by a Knowledge in their Nature and Use, knows better how to guard against by timely and proper Applications; but without, is not so safe in any Operation, nor can make so sure Prognostick.

To apply both, as Anatomy teaches what Part is hurt; so Physick instructs how the Symptoms peculiar to any are excited; together directing the Process; a Deficiency in either must make him proportionably unskilfull; but still Experience is the best Guide; the simplest Means tried being preferable in Chirurgical Practice, to the most elaborate Prescriptions untry'd, or try'd with doubtful and guessing Success. I cannot conceive how the wounding a Nerve or Tendon should excite Convulsions; nor how that, or a more distant Accident propagates such Convulsions, through the human System, any sooner than touching a Vein or Artery. I cannot understand how Mercury divided to Imperceptibility, either in Powder or Pill will mix effectually with the mass of Blood, and produce a Salivation when crude Mercury swallowed in fifty-times the Quantity, only runs through the intestinal Channel without such Effect.

Neither can any Man tell, wherein the peculiarity of Narcotick, Cathartick, or other Class of Medicines dwells; that they should so constantly, or for the most part operate to their Denominations; but
as

THE PREFACE.

as from Experience, I know both the one and the other to be fact, I can by the same Experience make tolerable, often certain Prognostic of the Consequence. Reasoning and Theory, so much admired in the Solution of these Phænomena's, comes hopping after Tryal, to confirm, or rather amuse with various Conjectures and Hypothesis's, as to the manner how the several Pathognomicks in Distempers are produced; and Remedies effect this, Cures. The change Physicians and Surgeons have made herein, evinces this, having been changeable with Times and Fashions. Where else are the Balsams and Emplaisters that did Wonders under Ægineta, Paracelsus, Hildanus, Aquapendente, &c. Empl. Smilii. Regium. Tetrapharmacum. Icesian. Dionys. Piscator. Asclepiades. Mundificat. Paracels. or any of those Physical Receipts that did such good but a Century ago? quantum mutata ab illis.

It is exceeding difficult from this, if not impossible, to attain any competent Knowledge in Physick, without Practice, and more so in Surgery. The Bulk of what is good, and to be depended on in either, is what arises from Experiments, a careful Observation on the Consequences of Hurts, and the good or ill Effects, Management, and Medicine had at different Times, in different Constitutions, Climates and Seasons; a Variation that adds to the Deception, and proves Conclusions from thence, to be of far more real Service, than Mathematical Theorems and Corollaries.

It will not follow from hence, That he who has the greatest Practice should be the best Physician or Surgeon, though a good Presumption. No, it is the Time, the Attention, and Judgment, different Capacities can make upon that Experience. One Man possibly

The P R E F A C E.

possibly becoming as able a Proficient with five as another with fifty Patients in the same Cases.

From this we may judge how precarious is the Assistance of Medicines that have no sensible Operation; and the different Opinions of Professors in those that have; when and where to be used, in applying Physick to Chirurgical Cases it appears still more. A Prescription in Fevers goes according to Mode and general System; but I know the Accident is from Pain; created by tort Bandage, ill Position, or Applications, which a simple Alteration at the Fracture, Luxation, or whatever else is the Case, better alleviates, than the whole Dispensatory can internally used.

To talk in general on the Nature of Fluids and Solids, making Mathematical Supputations of their Motion, Strength and Way of acting in human Bodies, is not a tenth Part so Instructive, or tending to relieve a Patient under Chirurgical Help, as seeing, feeling, and being acquainted with Practice: The Management and seasonable Change of Applications tried and warranted. For let a Man's Knowledge of Nature be never so extensive, he will find that best, though to Appearance ordinary, which can be best justified from Facts.

These Facts are readiest learned at our publick Hospitals, where the greatest Number and Variety of them present: But next them, I know no better School than the Royal Navy, especially in Times of War, to such of those Young Gentlemen therefore who are in it, and have a Mind to become Proficients, I bequeath this Advice.

In every Chirurgical Case of Consequence falling within their Cognizance; to meditate well on what has been delivered to the Publick on the Subject, and not so much to heed the Letter as the Substance.

This

The P R E F A C E.

This compared with daily Observations on such Patients, instructs how to correct the Errors of Authors when in any ; or confirms their Council ; together affording still new Light when the Accidents come repeated ; no general Doctrine being able to take in all Variety of Constitution and Circumstance.

Then to remark the Alteration of Circumstances, with their own Reasonings and Inferences in a Common Place Book ; classed for the easier turning to. A Man's own Manuscripts giving a readier and clearer Understanding, than the Writings of others, though better.

Lastly, If I had the Honour of being acquainted with any of our Admirals, I would also have entreated (for what I think might be a Benefit to the Navy in General) their Influence to have got two or three large Rooms from the Academy at Portsmouth for Surgeons publick Meeting and Use ; or if the present Building could not spare it, an additional Piece added.

Here I would have the largest of them set a-part to hold Skeletons, a Library, Cases of Chirurgical Instruments of all Sorts, and the finest Make. Other Cases to hold such Curiosities of Nature or Art they could procure themselves at Home, or from Abroad, and which I conceive every Man would take a Pleasure in contributing to, since every one might have a Benefit from such a publick Deposite.

Another Room should be an Amphitheatre to exhibit Dissections of Humane or other Animals ; with monthly Lectures during War, and Winter Season, that the Great Ships lay up ; on the various Subjects of Anatomy, Surgery, and Physick.

*Prating well in publick Assemblies is very much the Effect of Custom and Habit ; the Difficulties which at first present, vanishes in the Progress : And
such*

The P R E F A C E.

such Rules and Orders might be devised and a Syllabus of Subjects for Expatiating on. and Discussing as would I dare say, prove in time a better Amusement than any else, a thinking Man can be engaged in.

To these, if we add a small Kitchen, and a little Parlour or two to withdraw, wash Hands, and smook a Philosophical Pipe after Business, would be enough.



T H E



THE
CONTENTS,
OR
ARGUMENTS.

SENSATION. Page 1.



THE Senses are properly the exterior Soul : Of the same Principle with the Interior, and both subject to Improvement, Distemper, and Decay. What Judgment could there be without Senses ? And to what low and useless Purposes are the Senses when Judgment is lost ? They are therefore only different Modes, or a Continuation of the same Action begun at the Senses ; to be concluded and treasured up mysteriously in the more inward Recesses of the Brain. When they deceive, as they will do, in an infinite Variety of Cases, not being given so much for Truth, is to discern what profits or injures ; there Judgment is deceived proportionably to her Unimprovement. And where Judgment fails, the Senses are betray'd, see and hear things impossible, till like Controvertists they help one another to more and more Light in Subjects. — They are one

The CONTENTS.

one more than another of finer Mechanism, and the Operations from that Mechanism wonderful, especially Vision; and the finishing of any Intelligence. — That Colours do not exist in Objects was the Opinion of Zeno, Pyrrho, Carnades, and other Philosophers. Colour, Smell, Sound, &c. say they, are only Modifications of the Soul. First, Because no two Men See, Smell, or Hear a-like. Secondly, What is small to us, magnifies with lesser Animals. And Thirdly, Glasses magnify to ourselves without our being able to determine which is the truest Perception. — Again, there is an Inexplicable Mystery in the Variety of Sensation. What peculiar Symptoms wounded or abscessed several Parts will exhibit, they are all Pains, but different Pains, pointing either that the different Uses (Limbs or Viscera) required this Peculiarity of Sense, or this Peculiarity which is much the same, gives them their different Faculties. — Performed perhaps by different Species of Animalculæ at the different Workshops of Digestion, Chylification, Sanguification, &c. there being more Species of Creatures beyond than in Sight. All our vital Juices, the Philosophical Transactions has observed, abounds with Myriads, and may be a Reason the natural Powers go on still with the same Force and Assiduity with or without our Consent. Asleep or Awake, their Deaths being in the excrementitious Juices; continually supply'd by the Operations of Nature in the new Succours of Food pregnant with such Seeds of Life. The main Defect in the Atomical System was, not giving every Atom an inherent vital Principle, their Combination without it being more difficult to comprehend how they should proceed to Animation. The Opinion however, singular, is as likely to be as by Machinery and Mathematical Methods, which does not imply a proper Vitality,

THE CONTENTS.

ality, and whose very Principles, as I have observed, are unintelligible. The Center to which all Parts of the Earth gravitates (though, the modern Basis of all natural Philosophy) is a most inconceivable Thing, whether in a single Point, or a greater Portion of the Earth. And then that the Planets and all the Cælestial Bodies around us, should gravitate to one another (Sir Isaac Newton's Solution of Tides, &c. being grounded on it;) is still more amazing. Their Motions, I presume, are also to have a Center; and in an infinite Space, where to be fixed? Or how reconciled with each Globe's particular Center?

KING's EVIL. Page 21.

By King's Evil is commonly meant stubborn, hard, glandulous Tumors, in the Necks of Children chiefly. Sore Eyes, Scabbed Nostrils, White Swellings of the Joints, from a weak or morbid Disposition in Parents, helped on by ill Nursing and Management. They are sometimes found also in Adults; Stubborn Ulcers, and Joint Swellings being so denominated. — The Cure lays in a strict Regimen Exercise, Alteratives, Issues, and where it can be borne, Salivation. Topical Remedies and Extirpation seem the worst Method, producing after the fairest Appearances the worst Consequences. Quære therefore, in Adults, whether on the Abscission of an encysted Tumor (as at p. 30.) it's not better to turn the Wound into a continual large Fontanel, with half a Dozen Peas, before it's too far healed, than hazard the Closing? — The Royal Touch exceeds all Remedies here, where Faith is not wanted. If Apollonius, Vespasian, or our Countrymen Greatrakes, did Wonders by other Creeds, they no more disparage this;

The CONTENTS.

this; than Woolston's comparing theirs to our Saviour's Miracles, traduces the Gospel Cures.

FRACTURES of the LIMBS. p. 38.

Fractures of the Limbs are stiled Simple or Compound, that is, without or with a Wound, possibly Longitudinal as well as Transverse, from external Causes, and are known sufficiently by our Feeling. The Impotency of the Limb, particularly at the next Joint below, and in the End perceived by the bunching out of Callus. — Those called Simple have two Principal Intentions. 1st, Reduction. And 2d, Preventing and removing Accidents, Extention, Deligation, and Collocation, are the secondary Requisites to compass the other. The Compound are known like the Simple, with the additional Evidence often of Sight, and may require Extraction, and another Manner of Dressing and Treatment in order to Union.

FRACTUR'D SKULLS. p. 75.

Fractured Skulls very rarely, if ever have any Extravasation of Blood between the inner Table and Dura Mater, evinced among other Examples from Mr. Turner's remarkable Case (Vol. II.) in a very large Fracture and Depression. And as that is the chief Pretence for Trepanning, the Operation in most, has no Design or Meaning, may hurt, but can bring no Relief to the Symptoms; which appearing equally in a Concussion without Fracture should as necessarily demand it; but in both, 'tis the internal Effusion on the Substance of the Brain that produces the Signs, and for which, neither Apertion nor Trepanning can relieve. Nor is it more likely (supposing an Extravasation

The CONTENTS.

vasation after Falls) to be at the Fracture than any other Part of the Skull, and which if hit on, Dressings and Posture impede the Discharge. A Maturation dawbing the Sindon, when the exposed Membrane is incarning or sliding from Wounds near the Fracture, (V. p. 92. Ex. iv.) may have given occasion sometimes to call it so. ——— This Incarnation, after Trepanning, fixing the Membrane to the Skull, probably gives Rise to the Complaints of Head-ach after Recovery. ——— The Leaver here is not an Equivalent Power to raise the Depression, and especially of the outer Table; the Diploe intervening.

LUXATIONS p. 94.

Luxations chiefly respect the Joints of the Limbs, and by external Violence. When the Head of a Bone is prolapsed, the Limb that Bone serves too, is not only useless, but painful till restored, and neglected the want of Motion will affect other Joints, and in time induce an Atonia. ——— Principal Intentions are Reposition, Deligation, and Collocation. The first is compassed by Extention and Contraflexion. The second answered by Dressings and Bondage. And the third by an easy Position. ——— The Wrist or Ankle under any Sprain should always have Extention, that so any little Distortion those Bones may have among themselves, Imperceptible to our Fingers, may fall in again. A doubtful Tumor or Mishape is called a Dislocation or Sprain, according to the Reputation or Advantage calculated to follow, and sometimes according to Judgment, they both requiring in old People, Months often for a Recovery. ——— Contusions and Shocks at the Hip or Shoulder, we may observe also, elderly People, without Fracture or Dislocation, will sometimes produce an irrecoverable Lameness.

The CONTENTS.

The ingenious Mr. Cheselden observes, they have now and then in ill Habits occasioned Ulceration of the Glands in the Joints, eroding the Cartilages and Spongy Heads of the Bones.—— Instruments for Reduction are not so good as the Hands. They endanger fracturing the Cartilaginous Brims of the receiving Bones. Violently stretch the Ligaments and Tendons, inducing sometimes present Spasmodic Contractions, and yet are not more easy to replace by it, because the Bones is not equally extended, subjecting to future Lameness and Prolapse. We had a Quarter-Master who had suffered an extraordinary Extention of this Sort, to replace the Humerus that used to fall out again on very slight Accidents, which I have returned three or four Times in the Compass of a Year.

AMPUTATIONS. p. 118.

Amputations are called so of the Limbs. Extirpation of a Finger or Toe, and Abscission of a Tumor or Breast. The first Consideration should be, how to stop the Flux of Blood that will follow the Operation.—— Laid down in three Methods, with the Conveniency and Inconveniencies arising from either.—— The Operation and Cautions in performing.—— The Dressings then and afterwards in order to procure Digestion—— which once effected here, or other large Wounds should be altered to Restrictives, the continuing a too great, or a too little Maturation; being both Impediments in Cure.

WOUNDS. p. 160.

Wounds separately considered; of the Veins and Arteries. The Tendons. And when penetrating.
In

The CONTENTS.

In the first, the Artery has the most impetuous Flux; and more difficultly restrained when by Puncture, then by Incision. Suppose it were the Sural or Axillary wounded thus; my Method is stopping the Orifice close down with my Thumb, until a Turniket is clapped on, then sliding into the Orifice a soft Dossil dipped from warm Ol. Tereb. make suitable Compress and Bandage, relieving by Degrees the Turniket to a less painful Stricture.——

In the Tendons, Puncture also brings on the most violent and dangerous Symptoms, when happening on ill Habit; trifling Appearances being often under such Circumstances big with the worst Consequences. (V. Ch. on Mortification.)

Third, Wounds Penetrating, If the Viscera are more than superficially hurt, they are according to Hippocrates fatal; cui si perfecta est, aut Cerebrum, aut Cor, aut septum transversum, aut aliquod ex Intestinis tenuibus, aut Ventriculus, aut Hepar, lethale. An Aphorism that is found generally true, the extraordinary Cases cited from Authors, by Mr. Turner of this Sort, seeming little better than Romance; because their Offices are requisite to Life, which if not overset immediately, but lingering a few more Days and Weeks some than others, under a disturbed and foul Elaboration, and discharging into the Cavity of the Abdomen; yet the Wound, i.e. the Effects from it are commonly Death. When now and then a wonderful Recovery ensues, it has come to pass by the most simple and natural Means; Nature we may see was the chief Medicatrix.

The most likely to succeed, are those of the great Guts, and of them the Colon, which surrounds the Abdomen; and being brought to unite with the outward Integuments, discharges the Ex-

The CONTENTS.

crements that Way; as in Mr. Cheselden's remarkable Cure, where 26 Inches was lost, and yet the Intestinal Office went on for Years.

In the Thorax. When a Discharge ab intra is Purulent, and withal Copious; it argues an Abscess formed in the Lungs, which will a long time, (if not continually) want the Orifice to be kept open for an Extramission, like a Fistula, done either with Sponge or Gentian Tents. The close Adhesion, I say, of the Lungs to the Pleura; and uniting by the Circumstance of Solution in Wounds, is more commodious for this, than were it at any other Part of the Region.

AMBUSTIONIBUS, p. 176.

In Scalds. My Method when large, is to anoint the whole immediately with a Mixture of any Emollient Oil, or Hog's-lard, with Venice Soap, applying for the first Dressing a Cerate well soaked in the same, to blunt and contend with the fiery Particles insinuated ——— When the Blisters are risen well, which will be in few Hours, I chuse to cut them without bringing away much of the Cuticle, never all at the first Change, the softest Applications exciting too much Pain, when the Wound is large, and in tender Habits may induce Fever and Convulsion. Nor on the other Side must the Water in these Vesicles be detained too long, they act like an Escharotick, in Proportion to the Fire a great or less Scald gives it: My Dressings are always Pledgits spread with thin digestive, and warm'd over a Candle when applyed; Cerate wise they dry too soon. This Way they humect and moisten the wounded Parts, imbibing at the same time their Discharge; but when that is lessen'd much, a Cerate
is

The CONTENTS.

is best for finishing. In *Alto fecit.* ex Diapalm. Ol. rosarum Acet. & Bol. Armon.

R Butyr. insuls. Ceræ citrinæ defæcat. a. ℥iiss.
Ol. Olivar. recent. ℥iv. Lapid. Calamin. subtilissime triti ℥ij. 3x.

Melt the Wax and Butter in a glazed earthen Vessel, over a gentle Heat with new Oil, all others as they grow stale and rancid, growing unfitter for internal or external Use : When melted, strain the whole through a Piece of Canvas into another Vessel, commodious for stirring the Powder in gradually as it cools, and prevent its subsiding.

Mr. Turner, the Inventor, commends it here, and in all cutaneous Hurts, as one of the best of Epu- loticks; and I believe may be so, though his using Ten Pounds in a scalded Face, is no very great Proof of it.

In burns with Gunpowder. There is a Coarctation of the Skin while Pain is great, that hinders its being so easily picked out, coming away better with Maturation.

In all, (Burns or Scalds,) of Fingers or Toes, Ears or Lips, must have separate Dressings when the Cuticle is off; or care in some other Manner to prevent their uniting.

In the Face and particularly near the Eyes, unctuous Applications by getting in, become offensive and apt to cloud the Sight; wherefore they are with Caution used. Cataplasms are rather chosen to abate the Pain, of roasted Apples boiled up in Milk, with the Meals, a little Saffron and the Yolk of an Egg; dressing with Cerates at other times rather than Pledgits, Neatness being expected as well as Skill; and in Conclusion Cosmeticks, either

The CONTENTS.

Ol. Amygd. and Sperma Cæti mixed, or Virgin Wax, malaxed with Pomatum.

VENÆ-SECTION. p. 184.

Venesection, since the Circulation was discovered, is grown a first and universal Remedy in all manner of Aches, Pains, and Disorders from Repletion; whether by too full feeding, or cold taken, the two common Causes. Nor is it of much import at what Vein we let it out, though an opposite Region to the Complaint has some Shew of Reason. — Experiments on Blood out of the Vessels carries no true Inference to that within, particularly Vinegar, which we are told lately hinders a Separation of its Parts, and preserves from Putrefaction; insinuating thence, how proper to take or inject in pestilential and epidemic Cases. Whereas though it may preserve Cucumbers well, yet were the Plants to be watered thus, (if we may so call it) I question whether they would thrive. The Inward Use therefore, I conclude should be sparing, like good Liquors grown vapid; Pickles, dried Meats, or on the Hogoo Nature, dictates thus much, by giving us a dislike to such Viands, as our concoctive Powers fail and grow weaker, being then apt to make Concretions in the Bladder or Joints. It's best Physical Design is washing Cabins or Decks of Ships in hot Climates, where the Tenants are many, or Wards of Infirmaryes: Thus its reviving volatile Smell, and destroying Insects, makes it wholesome, and preventive of Contagion.

The CONTENTS.

RUPTURES, p. 195.

Ruptures are Intestinal or Omental; and at the Navel-Groin, or Scrotum, caused by violent Distensions of the Muscles of the Abdomen and the Peritonæum. — Windy, Watry, Varicose, and Flešhy Tumors in Scroto, are also called Herniæ. — How bred; where frequentest; their several Cures, and Reduction of the Prolapsus Ani & Uteri.

LUES VENEREA, p. 212.

The Origin of the Lues, probably as ancient as the World, a Punishment Providence tacked to this, as he has to all other disorderly Living, that for our own Sakes we might abstain. Our modern Derivation might Spring perhaps from Talicotius, the first Clap Doctor who appeared, and was famous soon after the Siege of Naples, of whom (see Tatler 260.) — How the Symptoms are produced in either Sex. — The Cure at any Stage can only be safe in Mercury. — And when arrived to a confirmed Pox, Salivation. — The Means to be used in a Course — Composition and Vertues of Belloste's Pill. — Dr. Dover's Sentiments in a Legacy to the People of Crude Mercury swallowed; the good it does in various Distempers, particularly the Asthma. — Insinuates, that to produce these Effects it enters the Mass of Blood this way administer'd, raising a Salivation, and that little Quantities has been found to pass by Urine; a thing incredible, and I hope not true, because on this Supposition it would more likely burst the Vessels, stagnate in the Bowels, and create worse Disorders than its designed

The CONTENTS.

designed to remove. ——— The Operation more likely where it does any good, is by the Properties of Weight and Cold, by means of the Genus Nervosum, communicating some Relief to the Parts affected, to be determined by nothing but Experience; for large Quantities taken down has been found fatal.

A M U L E T A, p. 274.

Amulets are of divers Sorts in divers Countries; of very ancient and more general Use, where Physick is least in Fashion. Works orderly as Analectick Bolus's do, most by Faith, either in the thing itself, bearing its own Reverence; or from that of the Person who practices. Agues, Wharts, Tooth-aches, Cramp, Dysentery, Strangury, Tarantula's and mad Dogs, Poison, &c. have all fell down before them; and if they fail sometimes, so have Remedies in a higher Class.

E M P I R I C I. p. 284.

*Empiricism is of Kin to Amuletism, only exceeds as much as the Pawing of a Cow, would that of a Cat, in his quod non norunt exerceant. In one we resign ourselves by Fasting and Prayer to the care of Providence; in the other, to course Receipts under the care of the Doctor. Some are itinerant, some with Back-doors and Lamps; and for the Gout, Mr. Collett has lately opened a Warehouse, where for the good of the Poor, he sells at Five Shillings a Dose only. A melancholy thing, as its for one Distemper, if the Patent should bring him in Patients enough to make a Hole in it. In these Jobbs, some good Hands must always be employed at the several
Ends*

The CONTENTS.

Ends of the Town, to spread the Fame, and report how many they have known, and how suddenly recovered, when all was desperate by Dr. — such a Ones Medicines. The Poor are hired to tell Lies all Day for Sixpence, Advertisers for Half a Crown, the drawing up Sixpence more; but the greatest Hopes is when the Esquire undertakes to recommend his Friend. The most famous in our Times, have been A. B. C. D. &c.

XENODOCHIA. p. 298.

Hospitals or Infirmaries, should have a publick Foundation: That so Labourers, Artificers, Tradesmen, and Husbandmen, who when they follow their several Occupations, and especially with Diligence, spend their Lives properly in the publick Service, might not depend on the Charity of private Persons for a Subsistence, when reduced by Age, Infirmary, or Misfortunes. When these become the Care of a Town or Parish, its adding another Workhouse, where those who are Sick and unfit, may abide till they are recovered; and takes the Stranger in, who helped to bring them there. They are big with these oppressive Inconveniencies, First, Let the Contribution be voluntary, yet those who are to ask in a Parish, will expect to have their Prescription followed; whereby some in respect to what Business or Good-will they may lose by Incompliance; the Partiality by that Loss they will be liable to in all other Rates and Offices to be served. And some from the Plea of God's-sake, will be induced; or of vanity to subscribe more, than in justice they ought to spare from Families hastning to the same pitiful Subsistence. Secondly, The Direction must fall under mean Hands; what a Gentleman or Man of Honour is
2
above

The CONTENTS.

above accepting; and generally lost to all, or a bad Sense of Religion: Trustees make as in Surveyor, Churchwardenship and the like, a Jobb of it, to the further Vexation of Inhabitants; or what seldom happens, their Ignorance lets others cheat.

Thirdly, What is the most substantial Argument against Workhouses and Infirmaries, which I consider of the same intent, notwithstanding the prophane Cry of Godliness in them; private Persons are oppressed who maintain them, though the others are not relieved, but are kept dirty, stinking, lousy, and starved; which with half the cost to a Parish, (the former customary Allowances of Eighteen Pence and Two Shillings a Week,) they could and did better provide for themselves; if fact and sensible Demonstration, can perswade, besides, (what was more precious,) had their Liberty. A Denial of this, by People strongly fancying themselves and Offsprings out of the danger of Tryal, is no proper way of deciding the Question; they themselves in such plain Matters, are better Judges of the Choice than the ablest Statesman if that might be admitted: It is of their own immediate personal Concern, wherein they have a better Knowledge. And why is my Liberty judged of another Man's Conscience? (1 Cor. x.) The Conscience of Trustees, who exult like Negro Overseers, on the greater Number of Beggars that pass below them? or of the busiest Traders and Dealers, who may propose some secular Advantages, from the Cooping up so many human Creatures?

MEDICINAL SPRINGS. p. 312.

Medicinal Springs, cold and hot, as they propose Exercise and Temperance, are in those Respects excellent. By their Cheapness, they are providentially fitted

The CONTENTS.

fitted for universal Use, wherein the Poor may mark them for the best, that are not locked up, or confined under any Cement.——The multiplying of Spaws, not so much designing Health, as the good of the Borough, rather adds to our Invalids of late Days; they, like the increase of Horse-Races, Assemblies, Opera's, Gardens, and Fiddling-Houses, looks sickly in the Lump, as though Trade was grown Asthmatical, and calling upon all Hands, fit or unfit, to bring in their Sixpenny Compounds and Cordials to her Relief.——They shew their medicinal Vertue best, in all nervous Cases, and Obstructions of the Bowels; where our hot Baths in particular, have done admirable Cures; and ought indeed, some having computed 400000 l. a Year to be spent there.——Catholicks double their Vertue, by dedicating such Wells and Springs to Saints, (Chad, Mongah, Winifred,) famous formerly, but now from a change in Religious Opinions, can do little good. What is very surprizing in both, is their being found sometimes so near one another; as in Germany, hot and cold Springs to be (Authors tell us) within a Foot of one another. Dr. Short on our Hyperborean, says near Pool's Hole in Derbyshire, you may put your Finger into a cold, your Thumb into a hot Spring or Brook at the same Time.

Physical OBSERVATIONS on the Coast of Guiney. p. 351.

*The Difficulties of Navigation on this Coast——Observations on the Air and Dews at Land, and sailing nigh it; with the probable Causes how Ship's Companies sicken in such warm Climates. Ours very fatal, the Epidemic Fever, that some survived, for want of Necessaries and fresh Provision turning
to*

The CONTENTS.

to Fluxes, that still continually lessened our Number.—— Suggestions concerning the Colour of Negroes, and great Distinctions on other Continents; called in nigher Neighbourhoods Complexions; by which alone almost, two the nearest Nations will know one another.—— Distempers peculiar to Negroes, particularly, Chicos or Worms, and the Difficulty of accounting for their Generation, inwardly or outwardly bred; most probably from a Principle of animation in ourselves; to Nastiness properly nested without, or corruptible Food taken inwardly; a Principle very much controverted, and in Vegetables, is giving a Creative Power to Beings more excellent themselves; from whence a Transition on the Benefit and Superiority between the Animal and Vegetative Life.

The greater Rarefaction of Air at these hot Latitudes, helps on the Convulsions of the Sick, having some little Resemblance to an exhausted Receiver, in which all Animals die convulsed; and intimates a Regard should be had to the Quantity, as well as Quality of Food and Labour to be used.



THE



T H E
I N T R O D U C T I O N .

INtrodutory to this NAVY SURGEON, it may not be improper to prefix a Word or two on the Method of obtaining an Employ, and on the Duties, without which the Book may be less useful.

The getting an Employ is not now so easy as in Days of *Yore*, when the Sea and the Gallows were said to refuse none, they were such bad Engines of Relief. Nor does it come barely from a Qualification, unless there be a great Call. He that has any Expectations now, must back them with the additional Gifts of a *modest Assurance*, and a Patron to practice it upon.

Modesty to be sure is an amiable Quality, what generally attracts Esteem; not that Sort genuine and natural, a Country-like Sheepishness, which rather exposes than helps a Man in laudable Pursuits. And why? such Natures are inclined to Truth, and are diffident; Qualities that cannot possibly thrive in a corrupt State, and where Candidates are numerous. What I mean is the acquired,

The INTRODUCTION.

quired, or *assured* Sort, such as is governed by Prudence and the Times; not easily put out of Countenance: A Modesty conscious of its own Significancy, and that can keep on its Application through Volleys of Denial, Frowns and Disrespect; a Man being to consider every other Sort which tends to do himself or Family a Diskindness in these hard Times, a Fault. The *Spectator*, whom every one agrees to have been an incomparable Judge, apologizes for it thus. “ The Great
“ have as many Obstacles, says he, to find Me-
“ rit, as Merit their Kindness; therefore we
“ should prevent the Trouble and Indignity of
“ Condescension on their Side, by a becoming
“ Forwardness, which all, Great Men like, adds
“ to a Recommendation, prevents Intruders,
“ and forms their Excuse against less deserving
“ Claimants.” On the other Side, one would think 'tis an easier and pleasanter Task on the Great Man's Side to enquire; having no Modesty to break through, and the Trust and Salary bestowed partly for his Capacity and Care therein. Can the Condescension be unbecoming, that tends by a right Choice, so much to their own Reputation; especially would they weigh the Merit that advances many so much above their Suitors. Cardinal *Richlieu* hated to be asked, he would have the Honour of giving from his own Motion.

In order to obtain a Surgeon's Employ, the first Thing done, is requesting a Letter from the Commissioners of the Navy to our Company's Hall, to be examined as to Ability; they have appointed Days, but do not examine without. This first and least *Favour* to a Free-born Subject,
is

The INTRODUCTION.

is very scrupulously granted, unless there happens to be a great Demand for Surgeons, by the hasty equipping of Squadrons, without some Commissioner espouses the Request, when the Admiralty Direction is wanting; a Difficulty calculated for Senatorial Power, and to be of some Benefit to Clerks and Secretaries.

Supposing this obtained, and you have gone through your Catechism at the Hall: The Clerk of the Company next Morning delivers a Certificate how qualified. Old *Hargrove* on this Occasion, always spread his Desk with Guineas; intimating how serviceable he had been in the Qualification, and that it would be a Shame to put Silver to such Heaps; but now the Custom is altered, there is a settled Fee according to the Rate, to take away all Pretence of being imposed upon.

If few Ships are likely to be commission'd, or Competitors numerous; a Man must then push his Interest, as called. The best Method of Success in these our Days, is by Members of Parliament; which if not personally related to, by his own Vote, must be beseeched by Cousins and Friends, of most Influence at the Borough he is transported from: Kindred or Creditors must be engaged by every Art, able to excite Love or Pity, to write strenuously to one, or both Members, in the same sort of Style, they prescribe Instructions now and then to weak Representatives on the more arduous Affairs of the Nation. Sneakingly on a pressing Occasion, gives a Misapprehension that they are not of Consequence. This takes off *Intruders upon the Member*, and warrants his vouching for
your

The INTRODUCTION.

your Capacity to some Lord of the Admiralty; who you must mind will measure his Dealings, by the Weight and Importunity of Recommenders; who like *Stock*, are worth more at one Time, or in one Man's Hands than another. It is a part of these ancient Privileges, our *Wittena-gemots* enjoyed, to provide among other Things, the better for themselves and Friends in the Government; and which is ne'er the worse for a Suitor, threaten to turn Patriots if deny'd.

If Gentlemen should slacken or grow lukewarm, as sometimes will be, if an Election is far off, or not dubious; you and Friends must exaggerate your Consequence, that seven Years, like seven Days, will have an End, and then your Votes and Interest will be withheld.—The King of *Prussia* disdains not this Motive, takes *Silesia* for his Vote.

When entred on the *Lords List*, implore him every Board Day at least, with a regular well timed Assurance, *ut supra*; watch his Motions in and out of the Council-Room, in and out of Town, with obsequious Bows, and a hungry begging Countenance; its better not dining till Night, than lose an Opportunity: Assiduity alone sometimes wearies an indolent great Man, and he must seek for ease by providing for the troublesome. I remember after I had been initiated for a Hamper of Candia Wine this way, and by a Friend's Friend, got recommended to Don *Galeatus*, not doubting after thirty Years Service, and having supplied the high Office of *Register* for low Wages, at the Trials of two Hundred Pyrates on the Coast of *Guiney*, 1721, I should
get

The INTRODUCTION.

get the trifling Preferment of a bigger Ship, yet for want of this Rule, miscarried.

Non ignarus mali miseris succurrere disco.

After ten Years lazy waiting, my Patron was so good as to tell me *off Hand*; that Officers of *twenty Years Standing*, were staring him every Day in the Face for Preferment; intimating as I thought, that I had not stared well, nor often enough; and gave me an Idea at the same time, of the great Capacity we admire so much in *Dons* who know, and dispatch every Man's Business at their Levees, with as much ease as others can draw on a Pair of little Boots. My Memorial was thirty Years, and yet am readily told Men of twenty Years Standing stared; they are without a Master of the Rolls, and Memorandums to prompt with; like a Conjuror without his Inquisitor, know little of their Patient's Affairs.

I must observe on this, that while the Prejudice of Parliamentering reached to a few (Scum Mob Slaves,) its of little Consequence, affording to Members a pretty Display of Wantonness and Power; but when the Practice becomes general, is far otherways. It fills a State with ill, sower Humour, and becomes one great Means (how scornful soever it may be rejected) of Disreputation and Contempt, both at home and abroad: For if Land and Sea-Officers are generally promoted, without, or very little Regard to other Qualities, than what respects Boroughs, the same Motive only better consolidated lifts some to the highest Preferments against every other Merit.

The INTRODUCTION.

Whence first it will often happen, that such have the Command given to them, who out of Ignorance in Duty, (they having less Occasion of Study, who are born thus to Friends,) or a want of Honour and Honesty miscarry. *Secondly*, a low Capacity in Commanders may expose the Reputation of all; may raise Enemies and Resentment from Abroad, or occasion pitiful Submissions for their Faults. *Thirdly*, there is reason to apprehend when good Officers are put by their Rank, and not only put by, but made to serve under those, who in all Respects they ought to have commanded, will be very sparing of any good Advice to make an Expedition successful. The Pleasure laying in undermining such a Commander's Reputation and Success, a Vanity few ambitious Men own, but most follow, because it points out the Weakness of Superiors; and as they fancy their own Usefulness. A *French* Historian takes Notice, that *Lewis XIII.* lost some Battles from a hatred to the Cardinal Minister. *Fourthly*, A Lord High Admiral, or the Commission, dispense their Favours on Requests that have neither Skill nor Curiosity, though principally blamed on the ill Behaviour, and Miscarriage of their Officers; a sort of Command, that lessens his Power in judging where its properly and peculiarly his Right. Heaps on low Dependencies makes him in a more servile State than his own immediate Dependants; because his Vertue will be called upon oftner than theirs, to give way to Interest, and perhaps obliging the Men he does not like: And lastly, he confers like as Beggars to an Alms-house.

To

The INTRODUCTION.

To return, not being able to Stare well, my Ship for many Years in *Ordinary*, and frequent Returns of the Gout, by toasting too often to the *Prosperity of Trade*; I thought it would be better, before too much disabled, to come on the Surgeons List again, in order to take a capital Ship if I could get it in the hurry of our Armaments, and by that Stratagem have added two or three Two-pences more to the Lumber of the Government; but their Lordship's Sagacity prevented me this Fatigue; ordering a present Superannuation, * which was for a Fourth Rate, the highest I had ever served in.

Those Surgeons who are still seeking for Employ at Sea, if they can get the Admiralty's Order supersede all others attending at the Navy-Board, *nihil refert respirare ad Romam*.

After being Sworn and Warranted, the first Business I think should be to acquaint *Apothecaries-Hall*; that Chest, Instruments, Pots, and Glasses may be in Readiness and suited to Fancy. Hastening thence to his Ship, neither Wages, Victuals, or Free-Gift commencing, till a personal Appearance before the Clerk of the *Checque* at that Port the Ship is fitting. From here he easily ob-

b 2

tains

* The Method here, after compleating eight Years actual Service in the Royal Navy, is to petition the Admiralty; setting forth the Age and Infirmities that induce your asking a *Quietus*. If their Lordships approve the Request, they let the Navy Board know of it; requiring a Certificate back, of the full Time being served, and in what Ships. On which they send their Order to settle a Pension for the natural Life. A Fourth Rate is 36 l. A First Rate, about 54 l. per Annum.

The INTRODUCTION.

tains leave again to *Town*, to look after the fitting of his Chest, and providing Necessaries, for what signifies the Workman without his Tools.

The Apothecaries Company obtained the Privilege of fitting out all Navy Chests in *Queen Anne's* Reign. Allowing on prompt Payment, two Shillings in the Pound, and when they trust, are to be first satisfied out of the Wages, Free-Gift, or Moiety that becomes due. The Surgeon not being able to receive any Part without their Certificate, *viz.*

To the Honourable the Principal Officers and Commissioners of his Majesty's Navy.

WHEREAS Mr. J. A—— Surgeon of his Majesty's Ship ——— in Pursuance of an Order of the 30th of June 1703, made by his Royal Highness Prince George, Lord High Admiral, and other subsequent Orders, hath had and received of the Company of Apothecaries, London, Medicines, &c. to the Value of ——— We the Masters and Wardens of the said Company, do hereby humbly certify the same; and desire that the said Sum of ——— may be retained to our Use out of the Wages and Two-pences due to the said Mr. J. A—— for the said Ship to the Date hereof.

Dated this

By Order of the said Master and Wardens.

J. Meres, Clerk.

Where we may observe, this Favour adds to the Price of the Medicines. The Surgeon must wait on his Eminence the Clerk till he is within, contrary

The INTRODUCTION.

trary to other Creditors who fend in their Accounts. He is debarred the Credit of paying the Debt himself, but stopped like a Bill of Sale to a Landlady at Pay-Table. Receives no Thanks or Treat for his Custom. And this only to maintain (I am told) a Bubble of a Stock for Apothecaries and their Widows, who receive according to Sums deposited, which is sometimes with more, sometimes less Interest.

Free-Gift, I apprehend, is the first Sums given by the Crown (according to Rates) towards fitting out Chefts. And Moiety (or Half) the annual Sums for recruiting them. — To take out this Bill, Permission runs thus.

The Company have no Demand on Mr. J. A——'s Free-Gift in this Ship.

J. Meres, Clerk of the Company.

To Mr. S—— of the Clerk of the Acts-Office, who underwrites to the Comptrollers-Office that no Abatement be made.

The INTRODUCTION.

A Free-Gift BILL.

July 1723. N^o. 4199.

TO Mr. J. A—— Surgeon of his Majesty's Ship Swallow, for his Majesty's Allowance of Free-Gift, for furnishing his Chest with Physical Drugs and Medicaments for the Use of the said Ship's Company, for the Space of forty Months, one Week, two Days, beginning the 9th of April 1719, and ending the 11th of May 1722, according to the Vouchers remaining in the Clerk of the Acts-Office. The Sum of Forty four Pounds seven Shillings and five Pence. } l. s. d.
44 7 5

Dated the 9th of July 1723.

AB—— CD—— EF.

The Vouchers here mentioned are the Captain's Certificate at the End of a Voyage.—— That from the Time of a Surgeons Entry, till the Date, he supplied the said Ship with *Medicines, Drugs, and Instruments*—and he must take heed the Certificate corresponds with the Captain's as well as his own Entry. If he should be removed or die in the Voyage, the next Officer Signs for the remaining Time.

This lodged in the Clerk of the Acts Office, 'tis certified thence to the Board, viz. Mr. J. A—— served as Surgeon on board his Majesty's Ship the *Swallow*, from March 17th 17¹⁸/₁₉, to May

The INTRODUCTION.

May 12th 1722, Capt. C—— Commander all the Time, and that Notice is taken that this Certificate has past the Office.

As there is some little Trouble and Fee attends this, I see no Reason why the Apothecaries should transfer the taking out these Bills upon the Surgeon, since they are particularly designed for the Articles they furnish; and who ought to have no Demand on Wages but for Exceedings. It is enough that they are compelled to buy at the worst Market, what no other Sea Officer as yet is obliged to.

Apothecaries-Hall, I believe, may dispence their Medicines as faithfully, as any the best wholesale Apothecaries in Town: The Hardship is not so much there I think, as in the Impositions of Quantities and Price. The Physician of *Greenwich* Hospital, and two or three Surgeons from the Hall, who do not pretend to be acquainted with Ships or Sea Service more than by Hearsay, fix the Invoices for every Rate, and as designed for Channel or Foreign Service. They *View* in the Conclusion to look after this and the Goodness of them, though never conversant in Dispensaries to have learned that Knowledge, and to whom it is no Imputation (being out of their Province to suppose them so far from knowing the Goodness of *many*, that they could not distinguish were the Labels off. For every such View of Chest or Recruits, every fourth Rate pays Fifteen Shillings towards a Dinner without being *Partakers*, an inverted Sort of Inferiority where the Bestowers are made less than the Receivers.

The INTRODUCTION.

The View therefore is worse than trusting entirely to the Honesty of the Hall, for if these in Consult with one another may be deceived, who are to pay: Less careful Judges may be biassed by the Management of the Treats to put their *Imprimatur*, where they should not, and better justify the profitable Sophistications, that without this they had been afraid to do.

There is a Difficulty to the best Judges in distinguishing many Medicines, especially as to the true Dispensation, and when they have dear Ingredients, and may be disguised with others cheaper; the Hall should be watched against both, in Justice to the Surgeon, and the Sailor, who ought to swallow nothing but what is fit for a Prince in the same Case: The properest Caution is to allow Navy Surgeons who pay the viewing Charges, to give it one or two Eminent Apothecaries to Inspect for them: They are the best Surveyors of their own Goods. And where a Medicine is not so easily discerned whether faithfully dispensed or not, to add something more, if required, for their Attendance in seeing it done. Mr. *Wright*, in his Travels to *Venice*, tells us, there is a grand Solemnity at making their Treacle, *the Ingredients being exposed some Days to be Examined, and Inspectors at the Composition.*

Receipts, with some rare or costly Ingredients, carry a Temptation, I say, to adulterate; and Mr. *Quincy*, who has writ the best upon Dispensing them, lets us know in several Places what may be left out or changed (*Quid pro quo*) to make

The INTRODUCTION.

make the Medicine better and save Money: I would therefore by this Proposal have the *Hall* paid for the Real, and not the Dispensatory Receipt; which in some, by Artists, can be made to exceed a double and treble Value.

If the Quantities were less, there would be more Justice to the Sailor as well as the Surgeon, and for these Reasons; *First*, He is to have a Review and Supply every Six Months at Home, and Abroad is occasionally ordered by Commanders in Chief, with Imprest Money (if necessary) to Purchase, and under a like Inspection where the Admiral thinks necessary. *Secondly*, The Government in Compassion to Seamen, have allotted Hospitals and Sick Quarters at every Port, who then expends upon his Chest with this Conveniency, hardly ever to be denied? the Removal tending so much to the Benefit of those in Health. In foreign Parts the Country must be unblest that will not afford an Equivalent to musty decay'd Drugs, for spoil they will, and sooner in warm Climates. *Thirdly*, Supposing for the Benefit of our Creditors that Electuaries, Conserves, Syrups, Roots, Herbs, Flowers, be pronounced of annual Decay; Plaisters, Oils, and Ointments, longer in growing dry and rancid, &c. The Quantities ought to respect the Conveniences a Surgeon has against the Expence, particularly in Channel Service, so that they may be neither put on Board purposely to condemn at a Review; and the Sailor may have fresh Preparations more willingly. The former being near, if not all expended reasonable. As there is neither Warranty nor Survey in his Favour, whereby a Purser

The INTRODUCTION.

fer in other Diet throws the Loss (when within time) upon the Supplier.

However the Reduction of Number is some Relief to Wages and Two-pences, our Invoices not containing $\frac{1}{20}$ Part in publick Dispensatories, not even Hospitals supplied at a publick Charge; whence I conclude these Gentlemen think a Multiplicity useless, or like Marigolds in Porridge, may be good with or without them; and from their Rule of rejecting many, I think appears a Reason why a Regard should be had to Surgeons in the Choice and Quantity taken of Medicines. He has gone through the Trials, and is the fittest Judge of what will be wanted, at least, a Society of the Eldest will; there is this farther Inconveniency from Apothecaries or their Friends governing herein; it reduces us to their own Condition on Shore, whereas Mr. *Selden* observes, If a Man has a great deal of Scammony, he must put it off prescribes in Scammony, &c. Sailors will be obliged to take those first, a Surgeon has most of, or are soonest in decay; and *tertia quaque hora*, when perhaps at his own Will, he had rather agreed to have taken what we call Doctor's *Stuff* at Sea once in twenty four Hours.

Omne Nimium vertitur in Vitium.

Were I to superintend, I would reject their dearest Articles from the Temptation they present of Cheating in the Compounding; and for a still greater Reason, That Nature has appointed those Things to be most useful for Food or Physick that are cheapest and easiest come by. The denying

The INTRODUCTION.

denying of which to me would be a great Step towards denying a Providence.

Cordial Waters, Tinctures, and Spirits drawn from stinking Malt Spirits; Articles in a Fourth Rates Invoice for Foreign Service, amounting to three or four Pounds, may, excepting one or two, be better made from our own less Knowledge in Pharmacy, and Abroad by *Succedaneums*, Tincture or Infusion with Foreign Rums or Brandies ——— *Tinct. Serpent.* is charged above five Shillings a Pound, when, according to *Quincy's* Receipt, it cannot be worth $\frac{1}{2}$ Part of that Money ——— *Elect. Antidysenteric* 8 s. 6 d. (*Cockburn's* and *Moreton's*) when *Diafscordium* is preferable; this Article seems to be for letting in a Genius to what we call a *Share in the Jobb*. A low Trick, and that they have not gone from the Success here to *Elect. mirabile Infallibile*, &c. (where Receipts being a Secret they might make their own Price,) is, I guess, the Danger of Imputation on the Masters who commission them to furnish Navy Chests, which might ruin the Scheme.

Besides this Slight on Customers Judgment, excluding them any Concern in Choice or Quantity, confining all to the same Rules of Practice, there is still a worse on his Honesty. — The *Precious* Ointments, Myrrh, Aloes and Frankincense *locked and sealed up* by the Hall, the Key is given by a Servant to *Peel Garlick*, enclosed and directed to his Commander, from whom he is to receive *Induction*: on a Surmise

The INTRODUCTION.

I take it, that he may * rob the Chest while under the Carrier's Care. *Hem!* When I consider the Worth at second-hand of what we can steal. From whence we have this Key. That a Robbery cannot be prevented no longer than the Chest is going on Board. And that on a Review the Repair is to be my Charge. I cannot help admiring the OEconomy and Vertue that shines through all our Offices; a Matter here not to be laughed at or easily to be forgiven, and carrying no Security to the Purpose aimed at is so much the worse; an arbitrary affrontive Injunction, far from making a Man honefter who has a Weakness in his Inclination: For he that is suspected where there seems no just Occasion, has Authority from that Suspicion to controvert with his Principle, and return on his saucy Adversary, a Rowland for their Oliver; *fraus meretur fraudem.*

An over-nice Exactness, (by new and *better* Orders continually) I account only as the Substitute of Wisdom through most Offices, the Defects arising from the Seeds of Virtue and Religion being left uncultivated, which abundance of Rules and Punctualities are but meaner Instruments to supply. A Multitude of Orders and Instructions are like a Multitude of Statutes,†
does

* *Quære whether making away with Part of the Medicine Chest, though in Imitation of the Samaritan, (Luke x.) might not occasionally from the Free Gift allowed towards it be deemed Imbezzlement?*

† *We had no less than 80 Volumes advertised lately to be sold; and are adding to every Sessions. The very reading of which, inflicted as a Punishment would be severe compared with hanging.*

The INTRODUCTION.

does not help, but confound Duty ; what with their frequent Clashing, the Spirit and the Letter, an Officer finds a Precept to walk by, honest or dishonest. If any Doubt arises in the Understanding of them, there is only a larger Fee required to the Office that has the Construction ; vulgarly called *Loop-holes*. What can be more accurate than the Sum Total of all our Officers Expence in National Accounts, where Shillings, Pence, and Farthings, stand in the same Line with Millions ; yet what a *Maze*, as the West Country say, must a Man be in who should endeavour to examine and see whether they were cast up right or no.

The next Thing to a Surgeon's doing his Duty on Board, is to keep a Journal by way of Proof, how and when such were slain, with a more particular Detail of the far greater Numbers that escape ; *Lediard* calls it a *Diary* of his Practice, the most copious Method to expend Paper, to which if a little Regard be had to its Softness, 'tis all that's wanted.

*They are then, for Family Use well fit,
For whoſo eats and lives muſt S——t.*

Every Navy Warrant * directs two ; one to be delivered to the Phyſician of *Greenwich-Hoſpital*, the other to the Maſters and Wardens of *Surgeons Company*, at the End of a Voyage, producing

* An Order eſtabliſhed by Prince George, Lord High-Admiral.

The INTRODUCTION.

ducing Certificates thereof to the Treasurer of the Navy before Wages can be received, wherein a Surgeon must mind all the Time be included, to which the Ships are paid, signify'd to them in the Title Page; if a Month short, the Wages for that Month will be stopped till renewed—
The Physician in my Time signed,

RICARDUS MORETON, *Hospitii*
Regalis Gronevocensis Medicus.

For which I paid his Footman half a Crown always, the Doctor never appearing, I believe, upon such frivolous Occasions. The Hall signs plain *A. B.* without any Pride, and take Sixpence less: In both its meer Formality, Signing to approve their own Judgments as Examiners.

To these Certificates already mentioned must be added, an *Imprest One*, viz. *That no Money has been disbursed to him Abroad by Order of Commanders in Chief*, who often supply in foreign Parts occasionally, to buy Necessaries for the sick and wounded, wherein he should be careful not to exceed the Government's usual Allowance *per Menssem*; an Excess still creating greater Difficulty at the Office when he returns.

A Certificate also will be wanting from the Captain, when a Ship has been in Rigging Wages any Part of the Time, *signifying he attended his Duty*; else receives for it only Rigging Wages.

If

The INTRODUCTION.

If removed abroad into a bigger Ship, exceeding or not exceeding a present Qualification, the Commissioners of the Navy must subscribe the Admiral's Warrant, for the Treasurer to wave the Objections. A Form only, because the Commander in Chief, assigns in his Warrant *by Vertue of the Power to him given, such an Allowance of Wages and Viſtuals for Self and Servants, as is proper and uſual to the Surgeon of the ſaid Ship.*

Warrants direct too, That every Surgeon ſhall give in to the Comptroller's Clerk at Pay-Table, a Liſt of what ſmart Tickets he had deliver'd during the Voyage, in a Form there preſcribed, to prevent the Cheats on the Cheſt at *Chatham*; Men with old Maims, Ruptures, Deſect of Sight, Schirrhous Swellings, and the like; ſometimes ſtealing an Entry by the Advice of Sollicitors, in order at a due Time to make their Complaints, and cheat the Publick of a Penſion.

Provided with this Artillery, he receives Wages, Free-Gift, and Two-Pences. The latter a Monthly Deduction from every Man's Pay, in order I conceive, to augment the Stipend, like Chaplains Groats, where there was wanting more Duty and Expence; otherways a great Ship to trim, is like being kick'd up Stairs. That this might have originally been the Gratuity for ſhaving, or taking Care the Crews were ſhaved, has ſome Reason in it, the *Companies* being the ſame; (as they are to this Day in *Sweden* and *Germany*;) but now the Branches are quite grown
diſtinct

The INTRODUCTION.

distinct and enough of them, the Reason ceases, Clear, because our Warrants direct nothing in this, though less material Duties are mentioned. And, *Secondly*, a Captain's Certificate is wanted to receive Free Gift and Moiety, by having supply'd Medicines and Instruments; but not for receiving Two-Pences, which would be, were there a particular Duty annexed to them.





T H E
NAVY SURGEON.

I. SENSATION, *or the*
EXTERIOR SOUL.

SENSATION is the Extension of the Soul. *Idem est Sensum & Cogitationem.* Without which it could not possibly exist, no more than a Man could see or hear after close shutting up of his Eyes and Ears. It is the external Organs that are the Ground-work of all Reflection, Ratiocination, and Memory ; are natural judgments ; and therefore we see Nature, in all perfect Animals, has made them compleat, intimating they are more essential, and necessary to the Creation in general, and perhaps to our own Being in particular, than those internal Operations we call the *Soul* ; but in a philosophical Way of speaking, should be rather styled the *Internal Sensory* : A Faculty of Seeing Hearing, &c. more intimately, or making Reflections upon the Notices of the Senses, by a finer Piece

B of

S E N S A T I O N.

of Mechanism in the Brain. They are coæval, we may observe neither of them perfect at once, but is gradual; hang to one another, like Cause and Effect, Subject and Capacity; and are Parts of the Seed transfused, like as in Vegetables, whose Seed are properly said to contain the Whole of that Plant, they have Power, in a given Time, of Producing. Nor is it so much a Wonder, the so exquisitely curious Modification of Matter, by an all-wise Creator, should produce the Faculties of Thinking and Reasoning, than that an immaterial Substance should do it, entirely inconceivable. Neither, as Mr. *Lock* takes notice, does it lessen the Proof of Immortality, which is, on Promise, the Gift of God, whether that be material or immaterial. *Nullum Ens est extra Deum.*

If it be said, we know not how a material Soul can think or reflect; the Mystery is as great, to know how the Eyes and Ears see and hear; both are capable of Improvement in Beasts or Men, shining in different Degrees through all, and more remarkable in some, than others of the same Species; which by all the Observation we can make, happens in proportion to the Exercise of the Brain, some may be pushed on through Choice or Necessity; or arrive to it, by a more exquisite Texture of the Sensories, one than the other.

What we call Education, is these Customs and Experiments methodized; and where we see different Improvements, they proceed principally from the Quickness or Sluggishness of the Sensories, made so by good or bad Masters, a particular Country, bright or heavy Examples; yet the Difference that is made of one from the other, the brightest Genius's or the greatest Dunces, does not seem, that Matter of Boasting against one another, as commonly thought; those of inferior Capacities, often excelling in more useful and felicitating Knowledge than Philosophers, the exterior Soul administering more Pleasure with less Pains.

If they make surprizing Improvements in any Art or Science, it is by long Study and Application, and then they must be content with a less Share in others; and it intense, a Neglect of the sensual, most easy to come by; and voluptuating in Tradesmen, Husbandmen, Artificers, &c. who know how to make the Change, a Justification of Providence, who if he had seen our

Hap-

Happiness to consist so very much in Science, had never dealt it out to so few, and so partially. Most People, by their Practice, whatever their Doctrines be, give a Preference to the sensual Man; even the greatest Advantage from Literature, and improving our Talents, is the better Relish they are able by it to give the Enjoyment of our Senses. Temperance and Continence are Virtues; but the chief Pleasure of these Vertues arises from the Improvement they give our Taste in enjoying the Creatures. All Creatures else are confined to it.

Men of deep Learning seldom understand much the Affairs of the World, what more essentially concerns the Happiness of their Being, fatigue themselves often for Things unprofitable, it may be pernicious; whereas ordinary Men hearken to nothing so much as the Necessaries and Conveniences of Life, wear their Senses out gradually with a constant and due Relish and Enjoyment of them; impartial Nature gives equal Capacity to all her Creatures of the same Species. If one Man excels in Divinity, Philosophy, or Politicks; another knows how to sow, reap, make a Stool, or a Pipkin better, equally useful, if not more. If the Scholar tires out his Spirits in Study; another in sensual Delights; it will be hard to tell on which Side to fix the Balance; if these bring Stings, so does the other. *He that increases Knowledge increases Sorrow.* As the exterior Soul is subject to Distempers and Decay, so is the interior; and subject, like them, to be restored again by Regimen and Medicine. Our Acquisitions are only to a certain Degree, and whoever endeavours to exceed the Limit, by incessant Labour and Exercise of the Brain, runs a hazard of turning the Soul's Faculties into Madness, or wearing them out to their primitive Simplicity, as Age sometimes will do without this; the *Fibres growing stiff* in them, perverting the Organism. On the other hand, *too great Laxity* will do the same; an extravagant Indulgence to all pleasing Sensations, or an excessive Use of Opiates, (since they operate by a pleasing Titillation on the nervous Coat of the Stomach, causing agreeable Plenitude and Sleep, or engaging the Fancy with pleasing Images, as it will do though we don't sleep,) I have seen, at length, cloud the Soul, impressing Dulness, Stupidity and even Idiocy.

S E N S A T I O N.

Sensation, or the exterior Soul, is in its Operations, as miraculous as the inward: How does corporeal Objects touch these Organs, and give us a Sense of Things without us, their Shape, Figure, and Use? and how does the internal Sensory catch hold of these Intimations, unless it was the same Thing continued? those, the external Part of the Soul, set out like Watchmen, to give Intelligence, and the other, a Store-house of Reminiscence and Ratiocination; from a peculiar and more exquisite Modification; though in one respect the Sense seems a superior Piece of Mechanism, while the Eye can take in Objects without our knowing in what manner, or how. Whereas, once taken in thus, we have a Consciousness that informs us more certainly of the Operation within, that is, of Matter upon Matter, and that more or less perfect in their Conclusions, as the Senses are in or out of Order.

The five Senses are but so many various Ways of *Touching*, differently distributed; and with a greater Plexus and Peculiarity of Nerve, have a different Feeling of Pleasure and Pain.

*“ The same Nerves are fashion’d to sustain
“ The greatest Pleasure and the greatest Pain.*

Thus, the tangible Objects are more exquisitely discriminated by the Fingers Ends, than the Hand, Arm, Leg, &c. Thus also the Act of Generation is, in a manner, a sixth Sense, greater and deeper than all others. How this *Touching* with the Eye is performed, with any Object, at a Distance, so as to tell us immediately how far, the Dimensions, Number, and other Properties, is as mysterious though so evident, as the Ratiocination as follows. In Tasting, Feeling, and Smelling, the Objects touch our Organs; but in Vision, our Senses are spiritualized, inexplicable as Light the Medium of it.

They are also refined, we see, from one another, as Feeling is from itself in different Parts; of which Anatomists give us this general Explanation. The Nerves, say they, are slender Bundles of hollow Fibres, wrapped in the *Dura* and *Pia Mater*, some no bigger than the $\frac{1}{100}$ Part of a Hair, every Fibre of them inclosed with the *Pia Mater*, answering, it's thought, a particular Part
of

of the Brain at one End, and a particular Part of the Body at the other, that so the Soul might know exactly, from the Impression of Objects without, what Part of the Body was affected. There are 10 Pair from the Brain, that serve principally to Seeing, Hearing, Tasting, and Smelling. And 30 from the *Medulla Spinalis*, concerned chiefly in the Sense of Feeling, dispersed throughout our whole Frame.

The Manner, in which all of them are thought to perform Sensation, is by a Fluid in them, called *Animal Spirits*, consisting of extremely fine Parts, secreted by the numerous Glands of the Brain, from whence they are moved to, and through the Nerves, only as they think, by the Dilatation of the Arteries that accompany them, a slow undulating Motion, and not by a Vibration to the Brain, which could hardly be by Bodies so involved with others.

First, Of Feeling. Performed by those nervous Fibres, every where dispersed through the Texture of the true Skin, where it makes those pyramidal *Papillæ*, the immediate Instruments of it. They are preserved from too painful Impression, by the Mediation of the Cuticle, and a Mucosity underneath; the Intervention of which makes them exquisitely (we find) distinguish rough, hard, soft, smooth Subjects, and convey according to the different Parts of our Bodies touched, and various Ways of touching them, a more or less perfect Intelligence, agreeable or painful Ideas to the Mind; and the Mind again we may observe, as a close and inseparable Companion, like Man and Wife, voluptuates or mortifies those Sensations; sometimes chuses, and sometimes despises sensual Pleasures. Hence, and from the Sensation we call Tickling, easier susceptible at one Part of the Body than another; the Teeth set an edge, as called; and some others; arises a Question, Whether the external Faculty of Feeling is of one, or more Powers of the Soul? *An sit una Potentia tangendi, sicut una est videndi, audiendi, odorandi, aut gustandi—an vero plures?* since 'tis not like them, confined to one particular Part or Instrument: but diffused through the whole Body; so as on many Occasions we see sending different Intelligence to the Soul, according as it is touched; at what Part, and how. The

Fingers that so exquisitely distinguish *hard, soft, fine, coarse*, &c. do not so soon or so well distinguish the settling of a Fly, or any small creeping Insect, as those Parts of the Body do unused to be touched. And yet what Pleasure does the same Fingers convey buried in a Lady's Bosom? that the Heel, the Elbow, &c. would be almost insensible of.

There is another Sort of Feeling different from this cutaneous one, of the internal Parts, subject to be pained by outward Accidents, or by taking in what may be noxious and hurtful to the Œconomy. We say, indeed, the Bowels will yearn, the Heart rejoice, but these are Things seldomer and more dully perceived than Pain, which chiefly denotes what we may call the internal Sensory here, *i. e.* those different and wonderful Faculties that reside in every Bowel or Limb, to carry on the Works of Digestion, Chilification, Sanguification, Nutrition, &c. Works still buried in darker Obscurity than Sense, and when disturbed from their Operations by any external Injury, give more severer Complaints than that principal Substance the Brain. They go on continually without our Consent, (such a Consent as that we see, or hear by) and are different Powers from the Rational, and from one another.

I sometimes think, since the ocular Demonstration of *Animalculæ* in seminal Liquor, that all these Faculties, dispersed through every corner of our Frame, are as so many Work-shops, for different Kinds of *Animalculæ*, that are labouring at their several Offices, like Bees in making Honey; a new and odd Sort of Hypothesis indeed to some Men, but will not appear so strange to those who can perceive the Truth of Mathematical Solutions about Secretion; this is easier, and with a Multitude of Hands, better and sooner dispatched. How jocose soever this may seem, I cannot help transcribing a Passage from my Voyage to *Guiney* and the *West-Indies*, on the voracious Bird, called a Pelican; having shot and opened one of them, there appeared two Ventricles, one below another, or a Craw and a Ventricle. In the first, I found to the Number of three or fourscore small Fish little altered; but in the lower Ventricle, towards the Fund of it, where they were most mash'd and macerated, the Mass had vast Numbers of slender lively Worms.

And

And finding the same Phænomenon in two or three more opened soon after, and that these little Fish, their Food, had no such Insects, I concluded it to be the common Accident of Concoction, (*Voyage, p. 250.*) *Vercellonius*, supposes the *Thyroide* Gland in Man, to be a little Nidus of verminous Eggs, generated there, and transmitted through subtle Ducts to the *Oesophagus* and Stomach, to impart a vital Character to the Chyle. These small Worms or Tad-poles, I suppose to assist in the Concoction and Maceration of Food in the Stomach, which having performed, they become one Mass; and probably other smaller Sorts still arise from the Business of Chylification, Sanguification, &c. All Nature is furnished with Animals, says *Speët. de Natura*, Earth, Seas, Woods, every green Leaf, even the Cells of Stones, are crouded with innumerable Inhabitants. *Lewenhoeck* found more, he says, in the small Guts of an Ass than he thought there were Men on the Globe of the Earth. Existence, they tell us, is in some manner thrown away on dead Matter, it being only a Blessing to Beings endued with Perception; and, therefore, suppose there is no more of the former than is necessary to support the other.

Again, if Matter be divisible *ad infinitum*, no least, (*Keil de Magnitudinum Divisibilitate*) there may be also Animals lesser and lesser *ad infinitum*, and so the Hypothesis of making our Secretions their Work, though imperceptible, has not much more wonder than mathematical Solution, an Art whose first Principles are unintelligible. *Superficies without Profundity. A Line without Parts. The Center can receive as many Lines as the Circumference, and other Axioms.*

Secondly, Tasting, is from Objects touching on the same Sort of nerve or pyramidal *Papillæ*, numerously laying on the inner Membrane, along the Sides and Tip of the Tongue; they reckon seven Savors, which may be compounded to Infinity almost. *Nullum Corpus simplex Saporem habet, solumq; mistorum Affectio Sapor est. Plerique septem agnoscunt Dulcem, Amarum, Acidum, Austerrum, (eager, or less than Vinegar,) Acerbum, (like green Fruit,) Salsum, Acrum, (Pepper, Ginger, &c.) sed hi Sapores possunt dupliciter, &c.*

S E N S A T I O N.

This Composition of the Tongue, together with the *Plexus nervosus*, made from the *Par vagum*, about the Mouth of the Stomach, gives so pleasing Sensations in satisfying of Hunger or Thirst, that it is principally upon the Pleasure in it, that we are incited to take any thing down for Sustenance, without which all the Fabrick must fail; a close Intimation of which is given us, whenever the Taste is perverted or lost. Our Mate, in the *Lyon*, at *Lisbon*, by an Accident of oversetting the Long-boat, drove with the Ebb all Night down the River upon her about twelve Hours, by which Cold he entirely lost Taste and Smell, and was exceeding careless afterwards whether he eat or no; and much less at a Meal than he did before.

Hysterick Disorders, by means of the Nerves of the Mysterium and Spleen joining to that same *Plexus* of the Stomach, affects it and the Mouth, taking away Taste and Appetite.

There is such Sympathy between the Stomach, Head, and Heart, that *Van Helmont* thought it the Seat of the Soul, and the Luxury of our present Age, (continually travelling hence to the Tip of the Tongue, and back again,) would almost convince one, that the Rich have no other Soul, *i. e.* no other Soul worth minding.

Thirdly, Smelling. The immediate Organ the Olfactory Nerves; are spread on the *Ossa spongiosa*, where some of the gustatory and lachrymal Fibres mix with them, whence the Sympathy, whenever they are touched by external Effluvia's, or by Colds. The Impression here is carried to the Brain, where the internal Sensory sympathizes. The Organ, it is true, is immediately concerned, as in the other Senses; but then many have thought, it's only as an Instrument, and that 'tis the Soul itself in any of them, that perceives and relishes, or is disturbed. From this mistaken Enthymeme, *Matter is incapable of Perception*: Ergo, *It is the Soul sees Colours, hears Sounds, &c.*

The Minuteness of Effluvia's, which thus strike the Smell are wonderful. There are odoriferous Bodies, says *Keil, de Legibus Naturæ*, that will affect the Smell five or six Foot round, in every Part of which Space (though they lessen according to the Squares of their Distance)

tance) there are still some Effluvia's ; so subtle, says Mr. Boyle, that a small Quantity of *Assa Fœtida*, exposed six Days to the Air, did not lose $\frac{1}{8}$ of a Grain. A Grain of Gold Mr. Halley tells us, may be cut into 10000 visible Parts.—A Grain of Copper will tincture 28534 of Water, (*Boyle de Subtilitate Effluviærum.*) — *Spectacle de Natura* tells us, a Gold-beater will hammer one Ounce of that Metal into 1600 Leaves of three Inches square, 150000 times more Surface than it had before. And that an Ingot of two Foot long, and three Inches Circumference may be drawn into a Thread 1096704 Feet long.—*Lewenhoeck*, that 1000 *Animalculæ* may stand on the Point of a Needle. Seeds contain, our Naturalists say, not only the Stem, Branches, Fruit, &c. they produce, but also others *ad Infinitum*.

From such Evidence to Sense may be formed some Conception or Idea of the *infinite Divisibility of Matter*. And that one Infinity may out-measure or out-number another ; “ *nam illud vocamus infinitum quod omni finito majus est.*” It is this Subtlety, and the more exquisite Mechanism in the Sight and Smell of Birds and Game Dogs, that probably is the Foundation of that wonderful Faculty in them we call Instinct ; as the Super-acuteness of other Senses may be to that of other Creatures. Instinct reaches to a few Things indeed, relating to the Appetites of Lust or Hunger ; but, in those few Things, they make better Conclusions, in what relates to Safety or Propagation, than human Understanding ; the Acuteness of their Sense, and a strong Appetite conjoined, helps them with admirable Sagacity, to pursue their Prey, Breeding, Migration, &c. In which, as they are seen to outdo one another in the Means, and some more teachable than others, they are Acquisitions to the natural Faculty, answering just as Education or Genius does among the human Species.

Fourthly, Hearing. Is a Sense still more spiritualized than any of the former ; some have given it an Excellency beyond Sight.

1st, Because it strikes upon, and affects the Soul more immediately than that or any of the other Senses, whether the Subject be of Joy or Grief ; making it, in a manner, to change its Nature, swells, flatters, thunders, &c.

When

S E N S A T I O N.

*When charming Teramintha sings,
Each new Air, new Passion brings :
Now I resolve, and now I fear ;
Now I triumph, now despair ;
Frolick now, now faint I grow ;
Now I freeze, and now I glow.*

POPE.

*While Music breathes in martial Airs,
The Coward dare forget his Fears ;
Or if the Notes to Pity sound,
Revenge and Envy cease to wound.*

DUCK.

Secondly, Because we get all our Improvements by Hearing ; whence *Aristotle* calls it *Disciplinæ Sensus*, spurring the Passions to Virtue and Emulation.

Thirdly, Faith itself, on which eternal Salvation depends, comes by Hearing.

Sound is the Object of it, a Quality arising from the Concussion of solid Bodies upon the external Air ; a Medium, without which there could be no Sight or Hearing ; *nihil enim eorum sine Atmosphæra fieri potest*. A Watch, Mr. Boyle tells us, cannot be heard to beat in an emptied Receiver, nor could Objects be distinct, unless that had been invisible.

The various trembling Motions (for it loses not the least Inflections) communicated there by some other Force or Power, is gathered by our external Ear, and, according to our Anatomists, passing through the *Meatus Auditorius*, beats upon the *Membrana Tympani*. The four little Bones there, moving in like manner as the *Tympanum*, by four Muscles not all together as big as a Barley-Corn, is beat by the external Air, which moving the internal Air, (very subtle, and thought *congenit* or born with us,) an Impression, according to the Nature of the Sound, is made on the auditory Nerve, spread through the Labyrinth and *Cochlea*, the Narrowness and Elasticity of which two Passages, hinders the Sound from dilating, which would weaken it, and their Tortuosity renders the weakest audible. “ Different Sounds are the
“ different Impressions and Refractions, various Bodies
“ make on the external Air ; an extreme great or small
“ Sound,

S E N S A T I O N.

11

“ Sound, cannot be articulate ; a Mediocrity is required, else the Hearing is indistinct and confused, as in too close Ecchoes, and comes to us like Light by a converging Glafs ; else Sound, that moves in a Sphere, (tho’ most in front Lines) would also be imperfect and confused.”

Air, the Medium of Sound, by its Subtility penetrates any Thing, Earth, Water, Minerals, Plants, and Animals, to which, in a great measure, is owing their Life, Activity, and specifick Gravity, differing from Æther, by its refracting the Rays of the celestial Luminaries.

Sound is a Body consisting still of much finer Parts. Air will weigh something ; a Column through the Atmosphere being calculated to an equal Cylinder of Water 35 Foot high * ; but Sound is of no Weight, and must be of infinitely small Parts. If we consider every Part of Space in which the Sound of a Voice or Drum is heard. Of how exquisitely fine Structure then must that Organ be, that has the Susceptibility and Examination of such Bodies ? That can so clearly distinguish the Scite, Distance, and Difference of Sounds, and not losing a Semiquaver in Musick ?

Some think Sound to be a Pulse, or Agitation of the whole common Air, it is heard in. Or, that it is propagated by an Æther passing through this common Air, much as Light is propagated to a Distance, though far slower. Sir *Isaac Newton* makes it consist in a trembling, as Wind does in a local Motion of the Air, and I think, whether the Noise be small or great, it is heard in the same Time, if equally distant.

Air acts strongly on Flame ; an inaudible Motion by a Poker or Tongs, put before a decaying Fire, supplies like a Bellows, or a heavier Atmosphere this Pabulum ; but Sound makes no Agitation of Flame, though put close to a Bell, and yet a great Noise.

The different Voices of Men, few among Millions being alike, is an admirable Instance of Providence. The different Sounds of Wood, Metals, Earth, &c. seems implanted by God in dead Matter, for raising a great Variety

* *Air to Water is reckoned as 800 or 1000 to 1. Sound proceeding 1080 Feet in a Second, and Waves are $8\frac{1}{2}$ Seconds running thro’ a Radius of 12 Feet (being neither quicker or slower for, or without Wind) and is about 765 to 1.*

riety of Pleasure and Amusement to Man. *Spectacle de Nat.* likens it to Instinct in the Animal Creation, that by not comprehending, we might every where be moved to Adoration.

Vision is the most perfect and delightful of all our Senses, converses at the greatest Distance, seeing a Star as soon as a Steeple, takes in a Multitude of Objects, and is the least tired.

By thus readily conversing with Nature or the World, we may be properly said to converse with God Face to Face, the Blessing of our Nature ; and though Labour and Industry, by means of Trade, is become so much the more necessary, and receives political Commendations, to spur Men on still faster, though only to support Luxury and Superfluity : Yet the chief Business and Felicity of Life, designed in the Creation, was Contemplation, and Men ought to be allowed a greater Mixture of it (*i.e.* Religion) in many Countries than they have ; his truest Definition being *Animal Religiosum*.

The Pleasures of the Imagination Mr. *Addison* allows to be the chief Pleasures of Life, and they mostly, if not altogether, come in by this Sense, from the Sight of what is great, uncommon, or beautiful : Being *New* excites our Curiosity and Disquisition, bountifully rewarding us in the Pursuit ; *Great*, improves our Devotion and Admiration of the Deity, Author of all these Wonders, both in Heaven and Earth ; and *Beautiful*, allures us to secular Happiness, especially that of our Species, to keep up Generation and mutual good Offices between Men.

Sight, the Inlet of all this, approaches the nearest to Immateriality of all the Senses, considered either in respect to the Organ, or the Medium Light ; which whoever can reconcile or explain by extended Matter, will not be far from comprehending the Soul extendible ; they both, as I have before observed, are material Organs, and in many Creatures the Suddenness of Choice to Action, shews them to be the Judgments themselves. In Man they are inseparable, *nihil est in Intellectu quod non prius fuit in Sensu* ; for what Judgment could he who had been always deaf pass upon Sounds ; or he who had been always blind upon Colours.

They

They are of the same Essence, or else it must be absurdly said, an immaterial Soul is bred of a material Principle, the Pre-existence alledged, rendring God too operose, solicitous, and indecorous. When therefore the Eye or Ear has attended more assiduously to Painting or Music, and distinguish more exquisitely, we say they have better Judgments in those Sciences than other Men, who have been without such Application and Experience.

Does not the Senses, according as they are affected, impart a Pleasure or Anguish to the Soul? and does not that in return add or diminish to them, by Impatience or Resignation? They lay down to Sleep, and rise again sad or chearful alike, their Clearness and Vivacity is mutual and dependant, and as the Senses flag and wear out by hard Labour, Study, Age, or Sicknes, so does the Faculties of the Soul; nor does this destroy the Resurrection or Immortality, I say, which is the pure Gift of God, whether the Subject be material or immaterial, 1 Cor. xv.

What occasioned many great Philosophers to hold the Soul immaterial, was I believe, among other Things, from this inexplicable Sense of Sight; for said they, if the Objects of Vision themselves are so difficult to comprehend, and in a manner, irreconcilable to Matter, much more the Mind, which could treasure up the Ideas as in a Store-house; Ideas that always correspond with the Images that made them.

Vision, as it respects the Organ, is made by the Tunicles and Humours of the Eye, the poorer the Composition for so extraordinary an Office, the more applauds the Divine Artift. The principal Parts conducing herein, are the *Chrystalline*, the *Pupilla*, and the *Retina*.

The *Cornea*, or coloured Part of the Eye is most convex, for gathering the Rays to pass through the *Pupilla*, (or little Hole in the *Choroides*, the next Membrane underneath the *Cornea*.) The circumferencing Part of the *Pupilla* is called the *Uvea*, with strait and circular Fibres, to dilate or contract, as there are few or many Rays of Light, or Objects distant or near, to make them more clear and distinct. Darknes hinders Dilatation, and too great a Dilatation by Light or Splendor will hinder their being contracted suddenly again, a Fault that is sometimes owing to the visual Spirits, or ill Conformity, and such are called *Myops*, or poreblind. Too much Contraction

S E N S A T I O N.

traction on the other side, by Age or Distemper, makes the Humours and Tunics grow flat, so as not to correct the Divergence of Rays, which fall by this means on a Point beyond the *Retina*, called *Presbytæ*.

To a perfect Sight also, it's necessary Objects should keep the same Station and Distance; for Sight being the Rays of an Object painted on one Point of the *Retina*, they are continually altering, in Sailing or Riding, to other Points of the *Retina*, and so seem to move.

The *Chrystalline*, is the most solid Humour of the Eye, convex on both Sides, placed behind and opposite to the *Pupilla*, for uniting the Rays, which come from one Point of an Object on one Point of the *Retina*, (a Membrane at the Bottom of the Eye, made by a fine Expansion of the medullary Fibres of the optic Nerves, on the Surface of the glassy Humour.)

Light, the Medium of Sight, puzzles the abstrusest Philosophers to find out its Nature and Properties; the Sun has always been considered, till of late, as the Fountain of Light, as well as Heat; and tho' it has not sensibly lost any thing of its Magnitude, by furnishing this Light from the Beginning of the World, yet it shall after a finite, tho' long Series of Years, be wholly dissipated; and therefore that the World has not, nor will not exist to Eternity. *Heaven and Earth shall pass away.* *Matt. xxiv. 35. 2 Pet. iii. 12.*

To familiarize by Comparison, and shew the ineffable * Celerity with which Light is projected from lucid Bodies, as well as the infinite Minuteness of its Particles, Mr. *Keil* proposes the Example of a Lamp or Candle; in what an insensible Part of Time, says he, may it be seen in a Circle of 16 Miles Diameter, either at Sea or on a Plain, may be instantly hid or taken away; and as instantly returned again; this shewing the Swiftneſs it darts with, and that the incomprehensible Minuteness of its Particles, because in every Part of that Space where it's beheld, must be some Particles of Light; and as there is an Ex-
pence

* Sir I. Newton calculates it 10 Minutes passing from the Sun to us, a thousand Diameters of the Earth a Minute.

Huygens, that it's 1000 Times swifter than a Cannon Ball.

Romer, 3000 Leagues a Second.

Is 600000 Times swifter than Sound; consequently its Particles 600000 Times finer.

pence of Matter to feed this Light, so the Sun like that, must decay, be darken'd, and the Moon shall give no Light, v. 29.

By the new Philosophy, Light is an intermediate Fluid, extending from the Sun to us independent of it, and before it, God dividing the Darkneſs from Light before the Sun was created, *Gen. i. 4.* 'Tis always with us light or dark, in ſome Degree, but moſt with the Sun's Appearance, whoſe Action only, by giving an extremely ſwift Preſſure to the Fluid, without its ever changing Place, conveys the Action to us. This Light by always ſurrounding us, (like Water the Fiſh) whenever a Candle or other Fire puts it in Motion, one ſingle Wave makes an Impreſſion on our Sight. Darkneſs is the Want of this Impulſion.

This instantaneous Projection of Light almoſt ſurpaſſes human Imagination to conceive how it's done ; but the Solution may be nevertheleſs true for our not comprehending ; who knows why his right Hand or Foot moves when the Left is at Reſt ? and ſo quick, he knows not whether the Will or the Action be prior ; and if he knows not this ſo near him, let him not be ſurprized at ſome inconceivable Laws of Nature ; the Taſte may be to increaſe our Admiration and Devotion, and to ſtruggle after that Perfection we hope to meet in Heaven. What I think ſerves to evince this latter *Hypotheſis*, are thoſe Lights ſeen often in the Northern Hemisphere, called *Capræ ſaltantes*, *Auroræ Boreales*, or vulgarly *Merry Dancers*, that illuminate dark Nights equal to a Full Moon. Thoſe ſeen ſo plain with us the 21ſt of *September* laſt, were Streams of Light from the Zenith on every Side ; inſtantly made, and enduring a half or a whole Minute ; others continually ſhooting into one another and as often removed ; therefore independent of the Sun.

Colours, according to Sir *I. Newton*, are not in the Objects, but are original and connate Properties, that in diſerſe Rays are diſerſe ; Red, Orange, Yellow, Green, Blue, Indigo, and Violet ; the Aggregate of theſe are White, their Mixture an Infinity of Shades, as Bodies are variously qualified to reflect or exhibit one Sort more than another, and changing with different Poſitions, more or leſs Light. Mr. *Lock*, (*Chap. VIII.*) ſays, Colours are

not existing in the Objects we see, but Ideas in our Mind exactly answering that Power which is in any Body to produce them there. Blue and yellow Powders mixed appear green, but with a Microscope blue and yellow interspersedly; and nothing hardly, holds the same Colour or Magnitude in Water, they had in Air. If they were really in the Objects, no Obscurity could vanish them, they would be the same Night or Day, in Water as Air; whereas, it is plainly the Texture and Configuration of their Parts, that gives a Power with Light, to produce such and such a Sensation in us. Bodies also have their primary Qualities, *Bulk, Figure, Number, Situation, and Motion or Rest*, whether we perceive them or no; but the secondary Qualities of Colours are a Result from the particular Constitution of those, and when the particular Constitution of one Body can alter the Texture, Figure, &c. of another, so as to give a different Sensation, they are usually called * *Powers*, the Thing changing having no Resemblance to what produc'd it. Thus, says our Author, Light and Warmth are not Qualities in the Sun, when I am warm'd or enlightned, no more than Softness or Whiteness are in it, because it melts and blanches Wax; but Effects depending on the primary Qualities of the Sun, that makes a Power able to alter the Bulk, Figure, Texture, or Motion of some of the insensible Parts of my Eyes or Hands, as it does the insensible Parts of Wax, so as to make them fit to produce the distinct Ideas of White and Fluid.

Warmth, by this Rule, is not in Fire; because a nearer Approach produces the quite different Sensation of Pain, which may as well be said to be there too; nor is Coldness in Snow, which can produce both the Ideas of Cold and Pain; nor Sweetness in Manna, no more than the Sickness or Pain it sometimes produces by taking inwardly, can be said to be in it. Both Sensations are Effects, from its primary Qualities, Bulk, Figure, &c.

as

* *There is hardly any Vegetable but beat in a Mortar loses its first Taste, which can only be from an Alteration of its Texture. Toasting Rhubarb too much takes away its purging Quality. Red Tinctures change by adding to them Sp. Vitriol. Water, Ol. Tereb. or Sp. C. C. will grow hot by mixing some Ol Vitriol. &c.*

as they operate on the Tongue, or on the Stomach and Guts, and are no where when we feel them not.

These and many other Positions relating to the Senses, such as Objects having no Odor, Softness, Hardness, Heat, Sound, &c. no more than they have Colour, equally to be made out by different Modifications of the Mind, should be a Lesson of Humiliation; how fruitless is the Imagination to comprehend God or the Universe, when we have so little Knowledge in the secondary Qualities, Powers, and Operations of Things about us. The chief Design of so large a Variety of Colours, Sounds, &c. from Particles of Matter tack'd together thus and thus, is to demonstrate the Power of the Godhead; and his adding them as supernumerary Ornaments and Delights, demonstrates as well, that in the Creation of the Heavens and the Earth, he had his chief Regard to Man: Other Creatures have little Share in this Variety of Sensation, and what they have, seems given to abate our Cares, and point out, that for us they live and see.

To return. Vision must be by immediate Contact, an Impulse of insensible Particles from Objects, very difficult to apprehend, yet should acquiesce, there being no other Way conceivable, and since it does not equal that hidden Power of the Soul within us, to put the Body in Motion instantly. Writers in Optics thus explain it: From each Point of an Object, say they, Rays flow to the Pupil of the Eye, where by the Humours and Coats, they are converged and brought together on the *Retina*, the contracting Fibres of the *Uvea* elongating the ChrySTALLINE to make it more distinct. If an Object reflects only one Sort of Rays, it will be of that Colour; if more, then it is mixed. The Reflection of all Sorts of Rays is White, and if none, Black, which is a Privation of reflected Light. Green, of all Colours, is look'd on the most agreeably, being a due Mixture of Light and Shade, and Providence for that Reason (it may be) has made that Colour most conversant on Earth.

The Rule of Reflections is, That Light falling perpendicularly on a Surface, returns again in a perpendicular Line, and the nigher they approach to this, the stronger and hotter the Rays. If it falls obliquely, it returns on the other Side with the same Obliquity, the Angle of Reflection being equal to that of Incidence.

The Rule of Refractions is, That when Light enters a Medium perpendicularly, it goes on in the same Direction. 2^{dly}, When it passes obliquely, and from a rare to a denser Medium (from Air to Water,) it will deviate from the Perpendicular, inclining a little to the Surface. Thus, a Stick appears crooked in the Water, and that Part in the Air more so, if seen from the Water. Put a Piece of Silver in an empty Bason, and withdraw your Eye so far as just to lose Sight of it, on pouring in of Water you recover it again, in an Angle of at least 23 Degrees. By the same Philosophy is answered that old Observation of seeing Cattle from *Greenwich* feeding in the Marshes on the other Side at high Water, and lost when it has ebbed. The Water refracts their Images as above, though they seem out of their Places at the same time. Red Rays have least Refraction, Orange Colour more, and so in the Order they stand, *ut supra*. 'Tis these Refractions by our Atmosphere that protract the Day, Morning and Evening; by what are called Crepuscles.

A rough Superficies receives, and remits the Light from almost infinite diverse Plains, into all Regions of the Medium circularly, *Omne Punctum luminosum radiare sphaeraliter*, and the smoothest Bodies have some Asperities; since therefore the Emanations are more congregated nigher, and rare and disgregate farther off, we cannot, even at a moderate Distance, tell whether they are rough or not. Why the Rays are determined more to parallel and front Lines, is principally from the Sun; and their converging in a *Focus*, or Burning-glass, so as to fire any Thing combustible, is from Quickning and Impelling with greater Force the Fire it meets with in the Atmosphere.

Bodies of uniform Particles and Pores the Light goes through, and they are transparent; but when of dissimilar Particles and Pores, Light is variously reflected and refracted, deviates from the Perpendicular in entering. Water, Oyl, Air, and most Fluids, separate and distinct, multiply the Reflections of Light better than Solids, and the Benefit from that, is rendering Solids more visible; many two Liquids, almost the clearest, when mixed, receive a Degree of Opacity they had not before, and in some

some the Clearness is entirely lost, as Oyl and Water, or Vinegar, beat together.

Ice and Water are smooth and of no Colour, until bruised or turned into Froth, and then become white from the copious Admission and Reflection of Light on all its Parts.

Any two different coloured Powders mixed, as Green with Yellow or Blue, though a *tertium quid* results, yet the original Colours may still be followed and distinguished with a Microscope.

All Bodies are impenetrable Elements; but some of Parts more porous than others, admitting the Light better, not always a standing Rule; for Diamonds, less porous than Cork, are more transparent: And Paper, whose Pores are filled with Water or Oyl, is seen through better than without. This more or less Porosity, with the Distance, makes some Things more opaque than others, and when Bodies are luminous themselves, they absorb or extinguish the others Rays.

As Light is designed for the Eye, that Organ has three Humours, agreeing to the Mediums Light passes through, without which, it is said, they could not so well unite the Rays in Order.

The Bundles of Rays that come from all Points of an Object, like radiating Pyramids on the Eye-ball, is astonishing. Suppose it were a Steeple or Steeples, or placed where we view a whole Town or Plain below, with Coaches, People, &c. or in the Reflection of fifty Looking-glasses together, every one representing the Images they reach to, distinct; it is exceeding wonderful to conceive of the Number of Rays, and of their meeting at the same little Entrance of the Pupil, there gather in Miniature without any being scattered, to picture an Object. A large Town, only Part of the View, cannot take up the Space of a single Line scarce in the Eye, (since half the Horizon may be seen at once) and yet to that single Line, it must move on 5 or 6000 Points perhaps, or Vision would be confused. These Lines, Opticians tell us, cross in the *ChrySTALLINE*, by their Pyramidal Axis, determining their Points on the *Retina*. That, through the Center of the Pupil, is called the *Visive Axis*.

S E N S A T I O N.

View Objects through a Pin-hole in a Paper, they are seen less, because the Pin-hole is less than the Pupil; intimating, that Sight does not convey the Truth to us, (of Magnitude in Objects especially) judging only in a Proportion to our Bodies, and so every Creature a different Impression, as may be most necessary to their Preservation; little Animals see Things in another Proportion to what we do. If a Star was thus looked at by us, it would appear but a Point, without Splendor or Beauty; and yet make the same Pin-hole through a thin Plate of Lead, and with a Drop of Water there, it will magnify.

I have collected these few cursory Remarks and Observations, only to give a general Notion of Sensation. The Height, Distance, and Magnitude of Objects, by Optic Angles, &c. I leave to others; this may afford some useful Inferences, both in Physical and Chirurgical Cases, where one or more of the Senses are unavoidably disordered. And as it is to magnify the Power and Goodness of the Deity, that could make Matter in his Hands to act so wonderfully, and imply Thanksgiving for the Bounty to us of Sensation, and by that all the Blessings of Life, I thought it no improper Subject before a Piece of Surgery.





II. The KING'S-EVIL.

HIS Distemper is called *Schrophula*, a *schrophis* seu *suibus* quibus hoc malum familiare est nominantur, and *King's-Evil*, from the peculiar Gift our Princes have had since *Edward* the Confessor's Time, of curing it when all medicinal Help has failed; from their Form the Tumors have been called *Testudo Talpa*.

By this Distemper is principally understood Glandular Tumours about the Neck, that descend sometimes quite under the Chin, obstinate Inflammations, running Ulcers, or Fistula's of the Eyes, swell'd chopp'd Lips, called *Labii Sulcium*, *Lippitudo*, *Ozæna*, and scabby Nostrils.

Tophi and Caries of the Bones, the soft white Swellings fixed in the Joints, or other Parts, *Exostosis*, *Spina ventosa*, several obstinate inguinal and axillary Tumours, with Phagedenick stubborn Ulcers in any Part of the Body, are all of them, when derived from an internal radicated Cause, commonly pronounced the *Evil*.

The Tumors, from a Resemblance of Matter contained, are distinguished into *Sarcoma* with Flesh-like, *Steatoma* with Suet-like, *Atheroma* with Pultis-like, and *Meliceris* with Honey-like Contents; one or other of these making up the Substance of Wens, Ganglions, and what we call *Scrophulous Tumors*. The three last are contained in a *Cystis*, moveable, and less compact and solid than the *Sarcoma*. Dr. *Wharton* thinks the Cause an Effusion of nervous Juice on the Glands and Interstices of the fleshy Fibres, the Jugular Glands most. This making a Compression on the Veins and Arteries (and more when contained in a *Cystis*) stops the Freedom of Circulation, and so some Part is continually and insensibly supplied gradually distending.

Mr. *Wiseman* ascribes the Rise to an Acidity of *Serum* made so, he thinks, by a sharp Air, Salt, or other bad Diet,

Diet, Want of Exercise in ricketty Children, ill Management in bringing them up, tainted Nurſes, or hereditary Affections: The *Stamina Vitæ* are imperfect or defective from the firſt Generation, and lays the Foundation of this Diſtemper in Children, who, we ſee, are moſt frequently troubled, and if not then, never. The concoctive Powers in every Bowel are weak from this Cauſe, made ſo either by the Age of the Parent, or ſome chronical Diſtemper, and particularly former Venereal Taints, which, though a Man may be cured of, yet long mercurial Courses will impair the elaborating Power of this Juice, and ſhews that Parents cannot beſtow a greater Bleſſing, nor challenge Obedience from their Offspring, on any better Foundation than conveying a ſound Conſtitution. The Weak or Morbid ſhould refrain from Matrimony while that laſts, they, like bad Stocks engrafted, imparting Miſchief and Unhappineſs to their Children, who, as they ſee did not deſerve it at their Hands, muſt in time make themſelves ſo.

This Defect of Generation does not immediately ſhew itſelf perhaps, but lays ready on any Accident of Contuſion, bad Air, Diet, or other Faults in Nurſing, and eſpecially when joined with improper external Applications, to ſhew itſelf in præternatural Accretions on the Glands, particularly the Neck, which become Phlegmenoide, Schirrhoide, or Ædematoide, with ſore Eyes, ſtuſſ'd Noſe, &c.

The Cure in General. Where the Cauſe of this Diſtemper is allowed to be *ab Origine*, Inciſion or Eſcharotics, to extract and waſte away the ſwell'd Glands, ſeem very improper, and the Succeſs boaſted of, ſuſpicious. The Proceſs is inadequate, the Juices in theſe Caſes muſt be all changed; the Bowels that elaborate, and Muſcles, that at the diſtemper'd Part are partially defective, muſt be invigorated, which cannot be answered by any of theſe topical Remedies, but, according to the Experience I have ſeen of thoſe unhappily afflicted, muſt be, as far as we are able, by a Change in the Conſtitution; for, ſuppoſe the Tumor taken out, without this Change, another quickly ariſes of the ſame Kind near hand, or at a weaker diſtant Part, and at beſt makes as unſeemly a Sight in the Scar as that removed.

A Regimen is the first and most promising Rule for Success. Flesh Meats and strong Drinks afford too much animal Spirit, which ought never to be increased (if Rules can prevent it) in these original Evils, beyond the Strength and apparent Elasticity of the Solids.

Vegetable Food, not pungent nor spicy, and Water-drinking, (for the same Reason the others are forbid,) should be instituted in their Place. Children's Fancies for Fruits, Acids, Sweetmeats, Salt, Spice, or any Compounds, should never be indulged. Parents or Nurses should never present a Temptation to Children's Sight of what is prejudicial, and then place the Fault of their own Inadvertency to a natural Tendernefs, give them any thing to remove the Peevishness they occasioned ; for I apprehend that neither Children or Men would covet any Sort of Viands they are not accustomed to, and therefore the Blame is entirely in those who have the Management of their Nurture. It is on this Foundation that many Nations and People, unused to Trade and Debauchery, brought up with the Country simple Food of their Forefathers, keep off the Injuries of this and chronical Distempers, shewing us the Way of Recovery is a Return to it. With these we have a constant and daily Commerce, our Chyle and Nutriment have their Source thence, and carry with them some Sort more than others, a salutary and gradual Alteration. And when, by a due Attendance to this, a Patient is found to be mending, the Palate stronger, and Fantasticalness worn off, we may fix the Times of Eating, of some Concern, tho' not equal to the Choice of Food, that the Elaborations may go on orderly, and without Oppression, when weak.

Whether Milks are proper is variously constructed, that of a healthful Woman is generally allow'd good here, being the sweetest and thinnest of all Milks, is natural and peculiarly adapted to the Nourishment of Infant Strength ; but others are questioned ; what most of our pale, thin, and peevish constitutioned Children in the *Evil* dislike ; it disagrees and nauseates, which, I think, in any kind of Food ought to be an Instruction to Men as well as Children to forbear. Here, if the Cause be an Acidity of *Serum*, the Milk meeting with it in the Stomach, turns, like as with Acids, hard nauseating, and less nutritive; though others I have seen highly approve

K I N G ' S - E V I L .

of them, as the most ancient, general, simple, inoffensive Food. *Boerhaave*, p. 207. gives the Preference thus: Next to human, Asses Milk is sweetest and thinnest; then Mares, Goats, and last of all Cows; when they disagree alone, they may be farther tried in other Shapes, Light Pudding, Cheese-cake, &c.

Exercise, gentle and easy to a Child's Strength, should be used to circulate the Juices better; Issues, Setons, and mercurial Purges, especially Diet-Drinks, that are alterative as well as purgative, and are a constant Drain for the bad, while you are supplying new Juices, these are Methods may possibly succeed, mitigate at least; for Exercise renders the Body perspirable, and gives, at the same time, a better Force to the Administrations, fitting the Matter of such Tumors for Dissipation, and may be in some Play, Walking, Riding, Friction, &c. as best improves the Amusement, mending the Efforts with the Success. The Strength gaining and keeping a Proportion to that constant Use and Labour one Man makes of his Limbs more than another, and should intimate to us the Virtue of it.

Alteratives are, *Antim. Diaphoret.*—*Æthiops mineral.*—*G. Guaiac.*—*Lapis Spongiæ*, Sponge dried in an Oven, reduced to Powder, and given a Spoonful in Beer, Night and Morning.—* *Millepedes*—*Pul. vel Decoct. ad Strumas Bat.*—*Decoctions of the Woods*—*Decoct. Edulcorans*—*Decoct. aut Cerevisia ad Scrophalas e Lignis*—*Phar. Extem. Quinzay Vinum Viperinum*, —*Cerevisia Scrophul.*—*contra Strumas*, &c.—*Wifeman* has many of these medicated Ales, Beers, and Broths.

Setons and Issues are standing Alteratives, they by continual Running, derive that Humor from the Part affected, which, let alone, would feed the Evil, evident from what is seen in the hasty or untimely Drying of them up, the Symptoms returning to the old Severity they had relieved. The properest Season for trying this is under a Course of mercurial Purgings, at the Age of Puberty; our Bodies receive prodigious Alterations at that Period, and is the critical Time of dissipating any Chronical

* *Millepedes should be washed, dried, and baked, then the Powder given in White Wine 3ls twice a Day. Some infuse 3l in a Pint, and take 2 or 3 Spoonfuls of the Expression, and some will swallow a Score at a time alive.*

nical Evil: If we fail, then the Prospect is melancholy. Providence seems to have ordained such a Remedy to engage our surer Trust in him, as it is the distinguishing point between Childhood and Manhood; we are in the first bearing the Faults of our Parents, in the Begetting or the Nurture of us, without repining, and in Innocency; but, after that Age, that our Sins might be more justly imputable to our selves, we are purged from those Fæculencies.

Salivation, though in Theory it promises as much in removing Strumous as Venereal Disorders, yet has not been found so; it's too rough for Children, in whom the Disease is immature, and when undertaken in Adults, the Lungs, Mesentery, and Bowels being in Fault, such a Process probably turns it into a nervous Atrophy; confirms instead of removing.

Topical Remedies, though I think them of very little Benefit in strumous Tumors, but that incautiously used they may exaggerate, yet they are expected and prescribed, safest and most seasonably, either when the Case manifestly partook more of an external than an internal Cause; or when there is discovered an Alteration of the Juices by the better Health and Vivacity of the Child; and lastly, when as a Proof of this, the Tumor is dissipating of itself; then hitting in with Nature, these outward Applications sometimes have seemed to have done Wonders, got the Name of Specifical; but if you wait not for such Indications, and repel, it will probably happen as in Arthritic and Rheumatic Adults, banishing from the extreme Parts, creates worse Disorder, seizes the Lungs, the Liver, or other Bowel, and ends the Patient with Consumption or Dropsy. Liniments and Emplasters have been recommended.

U. Aperitivo. Splaneticum. of Fuller. U. Digitalis of Bates.

Emplast. de Ranis cum Mercurio.—Diagalban.—ad Strumas. Or, *R. Empl. de Cicuta Melilot. a. ʒij. Sal Armoniac. ʒj. Laudani ʒjss. Bals. Ind. ʒij. U. de Cicuta Hil-dani & Ceræ. a. q. s.*

Empl. Ammoniac cum Cicuta.

Turner, p. 132. recommends *Glivers* beat up with *Hogs-lard*, *Scrofular*, *Pilewort*, or *Celandine root* into an Ointment with it. Or *Heund's-tongue* in a Cataplasim.

To

KING'S - EVIL.

To the Eyes *Collyria*, *Leaches*, and *Issues*. *R. Aloes, vel Tut. vel Calamin. bene levigat. vel Vitriol. alb. 3℥. infunde in Aq. Fœnic. Euphrag. Gelidon. vel Rosar.* or mix the Juices of the Herbs into a Liniment, with Honey or Conserve of Roses, using them always warm.

If these Tumors inflame, the Suppuration will be imperfect, gleet a while and heal again, or become stubborn Ulcers; an Extirpation has Hazard and ill Prognostick, the adjoining Glands swell again, or the Matter that formed and fed them, meeting now an Obstruction, revert into the Blood and promote greater Mischief.

The best Success to be expected from the Operation, as I have said, is when these Tumors are not *ex traduce*, but the Faults of Diet and Nursing, Blows, Pinches, and Bruises are moveable, and rather on fleshy than glandulous Parts.

A cross superficial Incision must be made over the Tumor its Extent, so as to raise the Skin all round, and turn out the *Cystis*. I have this Way extirpated such a Tumor upon the Wrist from a Contusion without much Trouble; but the glandular Tumors rising *ab interno*, their Pedunculus's rooted upon the Vessels (which must be tied before you cut) make it hazardous, both in respect to the present Flux of Blood, and the future Good it will be of.

Mr. *Wiseman* has a numerous List of these White Swellings, arising at the Ankles, Knees, and all over the Body, which he still calls Strumous; sometimes he cut into the *Cystis*, as a better Security against a Flux of Blood, or oftner opened them the Length of the Tumor with a Caustic, a simple Opening only rendring them so many sinuous Ulcers. These when opened, he with *Vitriol Roman. Basilican* and *Præcip.* sometimes actual Cautery, wasted and digested out the Substance of the Tumor: But when I consider the Trouble he had in the Examples related; that they would arise in another Place while he was eradicating the old ones; that not thoroughly extirpated, they would grow again; all subject to Hyperfarcosis and Indigestion, particularly the White Swellings upon the Joints and Limbs, that became so many carious Ulcers; I am prejudiced against his Method, and suspicious, that opening and exposing such malignant Tumors long to Air and Cathæreticks, brought on the Rottenness of Bone complained

complained of in many. You may try Emetics two or three Times a Week for a Month, or a gentle Spitting for the same Space, and may happily now and then succeed; but they are difficult of Revulsion, as is all Malignancy, and what is to be feared very much, if Revulsion takes Place and Strength by that means to the Joint, yet there is Danger upon it of Fever, Consumption, or worse Consequence.

The Strumous Joint Swellings of Adults, arising commonly from some obstructed Secretion, let it be of the Pancreas, Mesentury, Liver, Spleen, or Kindeys, and especially the Menstruæ in Women; it will follow, that the Blood for want of due and orderly Depuration, something like fermenting Liquors, will become foul, acquire an Acrimony, and in such Disposition, if a Fall or Sprain should weaken the Tension of any Joint, an Exertion of it there, produces a gradual painful white Swelling; and which I say, may now and then while recent, be happily dispersed.

The Method must be, (where Constitution will allow) by Revulsion; prepare the Body with a Purge or two, and give a mecurial Vomit twice a Week for a Month. The convulsive Motion of the Stomach thus repeated, contributing to make the Salivation more effectual; but then as Revulsion, I say, endangers other Plagues, Inflammation, St. Anthony's Fire, a Cough, Consumption, and the like; it is expedient to continue on the Declension with low vegetable Diet, and a purging Drink for a long time. To the Joint itself, apply a warm Emplaster of *Diachyl. ireat. Emple. cymino cum Galbon; vel Ammoniac.* M. Over it a Flannel, with a Lace Peice made of Cloth or Shammy.

On the whole, I do not think one in forty of these strumous Swellings meets with any thing above a palliative Cure, unless by a happy Change in the Temperament more than Art: Yet, for *topping* Christians, if I might have any Influence, I should advise a persevering under Physical Rules, to strive towards *Well-doing*, and if they miss a Cure, they may yet add to their Faith Virtue, to Virtue Patience, and to Patience eternal Rest.

Miss Thompson. A Child come to four Years of Age, when they first perceived a little dusky Spot, no bigger than
than

K I N G ' S - E V I L.

than a large Pin's Head, like a little Wart, above the left Eye-brow, which, as well as the Parent could recollect, happened from a Fall on its Face some time before; it increased slowly to the Bigness of a small Walnut, a very hard sarcomatous Substance but moveable, *i. e.* it was not fixed to the *Pericranium*. I consulted with Mr. *Middleton*, a Surgeon, in *Crutched-Fryers*, whom I was then acquainted with, on the best manner to destroy this Deformity; we agreed on a crucial Incision, and filling with Escharotics; the Effusion of Blood was strong, the Child with the Pain foaming at Mouth, and going into strong Convulsions, which, however, a little Anodyne Mixture in the Evening quieted.

Our Dressing next Day, &c. to the Wound was digestive, to loosen the Eschar, which when it came away, was superficial, the Tumor of the same Dimensions, and finding the Wound to be healing a-pace, we made the same Incision and Escharotic Application with no more Success than the other; this Wound also healing soon, and with greater Deformity.

Being loth to trouble Mr. *Middleton* any farther, who had no Fee for this, I proposed to the Mother, taking off the whole Substance with a Knife at once: I thought it might be done with as little Hazard to the Child's Life as Escharotics, against which I was very much prejudiced here, and as the Tumor was an increasing Deformity, were Death the Issue, both Parents and Child would be better reconciled to it at Four than Fourteen Years of Age.

The Mother after this took three or four Months in consenting. I then marked with Ink the Circle I would make with the Incision, taking in every Part of the Tumor, began with my Knife from below, that Blood issuing might not hide the Mark, and carried my Hand round quick, bringing the whole away with the left Finger and Thumb that I had held it by during the Operation; a very hard horny Substance; an impetuous Effusion of Blood followed, which I immediately suppress'd with my Thumb, apply'd soft round lint Pledgits dipped in hot *Ol Tereb.* to the Wound, Compress and Bandage round the Head, that with the *Os Frontis* against it, was of sufficient Security; all as quick as possible, the Child foaming at the Mouth much all the Time, and in so strong

strong Convulsions that we doubted of its surviving an Hour; however it did, and slept a little that Night.

After 30 Hours I took off the Dressings, no Effusion of Blood following, and applied the common Digestive, warm, which in two or three Days brought a Maturation, but the Flesh in the Wound rising fast and spongy gave me new Apprehensions that the Work would not prove good, and the Applying of Eucharotics immediately gave Convulsions. However, with the *Vitriol Stone* I made the Cicatrix in about three Weeks; the Scar, like that of an Issue dried.

What I would chiefly observe upon this Case is, the Child was never well after the Operation, though it lived two Years, and died in the end with a violent consumptive Cough, a Cough not from Cold, but Acrimony of the Blood.

Miss Jane Sheelds. From her Birth almost had been vexed, from time to time, with Eruptions and Scabs about the Head and Face, that appeared bloated, and falling again with a little Purging and Warmth. At four Years of Age, having lived on Flesh Diet, an Indulgence whereby fond Mothers express their Affection, she had the swell'd chopp'd Lip, gummy Eyes, stuffed up scabby Nostrils, glandular Swellings in the Neck, and followed with such a prodigious Inflammation and Running of the Eyes, that the Cheeks was in a manner scalded, and Sight so tender, she could not bear the least Light, living confined in a dark Room six Months. I was come from Sea, and to the various Collyria, Blisters, Leeches, and a purging Diet Drink, that had been used with little Success, cut her an Issue in each Arm, desiring a Restraint from all animal Food, and a constant Use of the Diet-Drink. In a Fortnight's Time the Issue that had ran very much, relieved the Eyes, and becoming strong and lively a Twelvemonth after they were cut, I dried up one, and then the other, substituting mercurial Purges twice a Week, &c.

At the Fall succeeding this Spring, all the Symptoms returned with the same Violence, obliging me to open the Issue with Escarotics, which, when they came to run again, abated, the scurfy Nostrils, that used to blow off and fill again every two or three Days, seemed now clear, the

K I N G ' S - E V I L.

the *Labii fulcium*, bloating Cheeks, and Inflammation of her Eyes, in two or three Months disappeared again; nothing remained of the Distemper but the strumous Swellings about her Neck, which, I should have observ'd, had been there some Time, without growing bigger and without any Pain. The Issues therefore, as being thought nasty, after two Years that they seemed to have drained off all the vicious Humour, were a second Time dried up.

The Consequence of this, was, in a few Weeks, a Return of the Complaints, and dissipated with opening one of the Issues. The Eyes in particular continuing free from any Pain or Inflammation three Years; but the following Summer, the twelfth Year of her Age, instead of this she had wandering Pains and Stitches, Nauseating, Head-ach, short Breath, Palpitation, and a *Lienteria*, confirming how difficult the Work is *ex traduce*. If one Pain or Symptom was removed, another as grievous immediately started, ending all of them at last in a desperate hectic Fever and Cough, that she was bowed double, had no Stomach, nor could sleep but in an upright Posture almost, and then very little. From her Stomach came off constantly Abundance of crude Phlegm, which I was obliged to relieve with now and then a Puke of strong Green Tea, or a Purge of *Syr. Rhabarb.*

I was solicited by an ingenious Friend at this Age to try Steel Medicines, it growing about the Time of commencing Woman, the Illness seemed a Struggle to attain that Period; but I could never consent, all Steel Preparations, where the Person is hectic, or the Lungs any way affected, appear to me dangerous, it is adding more Motion to the Blood, that is already too much in proportion to the Strength of the Solids.

The Child with little Intervals of Ease and appearing in Health, attained the fifteenth Year of her Age, and then under extreme Lassitude and Wasting, short Cough, strong Palpitations, rosy Cheeks, Looseness, and Sweats alternately, died.

Observation III. A Woman that I was called to advise upon, had a large Steatomatous Tumor the Inside of her Thigh, the Growth of many Years, and now in the
Fortieth

K I N G ' S - E V I L .

31

Fortieth Year of her Age, had forced a little Eruption, and grown painful and ulcerated.

The Gentlemen advised with on this Occasion were all of Opinion it might be safely extirpated, and the Ulcer spreading, and shewing the Dimensions of this foreign Substance, how loosely joined, gave Encouragement to the Operation.

The Whole was loosely joined by membranous Substances to the Muscles, easily divided, and separating of itself as it were, was taken out whole; a Flux of Blood followed from the many Vessels communicating with it, that was with Difficulty restrained; however, good Bandage and Rest quieted this Fear, and the Woman in a few Days, by some internal Cardiac Medicines, and a proper Regimen, was quit of the Fever, and the Wound, which was very large, by Fomentations and Digestives came soon to a kind Maturation; increasing in a very prosperous Manner to Appearance for three Weeks, with the continual good Wishes and Prayers of the Patient for her Surgeons, and was more hearty, chearful, and had a better Stomach than many Months past: But when the Discharge came to lessen, by drawing in of the Cicatrix, at a Time when all was thought well, then her Stomach fell off, she grew faint and sick, her Head ached, Convulsions in her Bowels, and, in short, the whole nervous System felt the Shock, till Death dissipated all, which was soon after, before the Cicatrix was confirmed.

Remark. These strumous Swellings have all a Malignancy, and more the longer their standing; an Eruption points out this Malignancy, and worse when the Ulcer spreads, discovering a Phagedenic cancerous Nature, and the true *Pedunculus* to be in the Constitution.

The like may be observed in the Glandulous Tumors of Women's Breasts while they are recent, and with very little or no Pain, topical Applications may luckily be of Service; but when these Glands become hard and fix'd for Months or Years, or on any Accident afterwards, Suppression of the *Menstrua*, Blows, or the like, begin to grow uneasy, prick, and shoot, I am very much in Doubt whether the mildest of them will not improve the *Evil*. The properest Palliatives, and what a Woman ought to rest contented with, is guarding the Breast from all Pressure and Contusion, making an Issue in the Leg or Thigh,

an

KING'S-EVIL.

an exact Regularity and Temperance in Living, a laxative Diet-Drink, and now and then *e re nata* a composing Draught or Julep; for, if once the Skin breaks, to which all such Pain has a Tendency, and to which at such Time all topical Applications invite, the Accession of Air and Incongruity of Medicine exasperates

The ROYAL TOUCH.

This Remedy, the only effectual Cure for so obstinate a Distemper, is ridiculed by Men ignorant, or of factious Principles, who are for restraining too much Reverence either to God or the King. Should they allow it a Truth, they acknowledge a divine Energy in Princes, the Consequences of which are the *Jure Divino* Doctrine, a constant Lecture against Rebellion. It is better therefore, say *Hoghan Moghans*, who are driving at Princely Authority themselves, to expose such Cures as silly, or flatly deny them; it requires Assurance indeed to do it as it should be, but then the stiffer we appear against Evidence, the more Vertue.

Mr. *Wiseman*, Serjeant-Surgeon to K. *Char. II.* whom I take to have been a very honest Man, tel's us, to his Knowledge, Hundreds have been cured of the *Evil* in that Reign, *Children* as well as *Adults*, after all medicinal Processes had failed. That the *Touch* cured more in one Year than all the Surgery of *London* in an Age; and that the Blood of K. *Char. I.* caught in Handkerchiefs, had done the same.

Mr. *Bernard*, Serjeant-Surgeon to Q. *Anne*, asserts the same, (*Turner*, p. 172.) That he had known many strumous Glands, which had stood unmoved against the strictest Physical R gimen for Months, nay Years, *immediately disappear after the Queen's Touch*, when both Physick and Surgery had been laid aside.

The Facts are recent and numerous, not to be disguised upon Men like Palmestry, or *Hocus Pocus*. And as it was to all Sorts, Poor and Rich, Young and old, Religious and Prophane, points out the Vertue to be alone and indisputably in our Princes.

This miraculous Gift came first, we are told, to *Edward* the Confessor, a Saint as well as King, and given, perhaps, in consequence of that miraculous Power in the Gospel, that was to attend the establishing Christianity from

from Heathenism, Judaism, and Cruelty. If *Matthias*, the Apostle, and other holy Men are in the planting of Christianity agreed to have had the Power of Miracles, to propagate the Faith, the Continuance of that Power was as necessary in other times to defend and preserve it, particularly now against the *Danish* Barbarity and Cruelty.

The first Instance of Cure, was of a young Woman diseased and barren, who being admonished in a Vision, (after all other Means had failed) to go to this *Edward* the Confessor our King, obeyed the Warning, and found his Merits, by the Formality of Washing, Touching, and Signing with the Cross the Parts affected, had cured her. The Sores putrefied and healed in a few Days, without the least Scar. From him it has descended to his Posterity, *nec in indigno Hærede defecerit*, till of late Years, honest *Rapin* tells us, King *William* was so convinced he should do no Injury to the Afflicted, by refraining this Touch, that he forbore all his Reign; insinuating, I take it, that it would have been like *Simon Magus* imitating the Miracles of *Philip*.

But as this of *Edward* is all stuff, and carries no Conviction on the Principles of Whigs, I shall endeavour to maintain the Miracle with something similar from their own.

First, All our Church of *England* Priests, 'till A. D. —, believed there was something holy in *Orders*. That the Bishop in *this*, in Confirmation, Baptism, &c. conferred a Grace, at least a spiritual Blessing upon Receivers: And what was more wonderful, could delegate the Gift to Thousands, to do the same Thing where they pleased. On which I would argue, that whoever can defend the Doctrine, must be wilfully blind, to deny this Power of Healing by Prayers, Touching, &c. of their Prince. He is certainly a greater and more sacred Officer, Head of the Church, and descends not to the lazy gaping Way of Trustees, but does it in Person: If this Holiness be urged as a Doctrine obsolete among the Clergy, it implies a greater Miracle than what is pretended about the *Evil*; it supposing that all Men may live happily and get Grace without Religion, or religious Means.

Secondly, Our whole Liturgy is a vain and idle Amusement, if we do not think our Prayers and Petitions for
D the

K I N G ' S - E V I L.

the Absent or Present, the Afflicted in Mind, Body, Estate, &c. would not be favourable and helping to us in those Requests. Or, what would signify solemn Fasts, Humiliation, and Intercession, if we did not believe God Almighty would, in his good Time, answer our Desires? What is the Holiness of the Sanctuary that our Prayers should be believed to operate more to our Good there, than in the open Road? The King's Person, Office, and Residence, therefore, bears as much Sanctity, and more Awe and Reverence in them, than common Tabernacles, especially wooden ones and *Welch* ones, with their tatter'd Priests and Altars. Why then should not Christians, who are convinced by their own Purity of the Grace and Success they have received by their Attendance on the Sanctuary and its Ceremony, tho' quite *calm and undisturbed*, disbelieve this Gift of Curing in the King? when his Solemnity so much outstrips theirs, and when those, who are expecting Relief, are so much more fervent (if at fit Age, or if not, their Friends for them) in their Prayers to obtain, because so much their Interest. I am far from designing by this any Sarcasm on Persons or Things dedicated to the Service of God; I rather mean and insist, that such wonderful Effects from the Ceremony of the King's Touch, Prayer, &c. in numerous Cures, so well attested, should be a strong Argument for the Holiness of all. That some Things and Persons are, and may be more holy, by a proper Separation to their Office, than other Things or Persons that want it.

Thirdly, Mr. *Greatrakes*, born in the County of *Warrford* in *Ireland*, had a strong Impulse upon his Spirits, 1662, that he could cure the *Evil*, and, at the Persuasion of his Wife, made the Experiment with Success, carrying it on in that and other Distempers for three Years by Stroakings. In 1665, he came over to *England*, was invited into *Warwickshire* by Lord *Conway*, to cure his Wife of some Ail, and stroaked many People into their Healths in that County. At length he published a Vindication of his Cures, in a Letter to *Robert Boyle*, Esq; fortified with the Testimonials of several Persons of Quality and Credit, who attest the principal Matters there related. The famous Dr. *Hen. Stubbs* was an Eye-witness, and gave an Account in a Book he cal-

K I N G ' S - E V I L .

39

led *The miraculous Conformist, &c.* Mr. *Joseph Glanvill* resolves these Cures into an extraordinary sanative Quality, lodged in the Constitution of *Greatrakes*. Others, an exemplary Piety: Several pious Whig Ladies have succeeded to this Gift.

To make my own Conjecture and Observation on this Miracle-monger, (for I have no Authority) I suppose, *First*, that Lord *Conway*, Mr. *Boyle*, People of Quality and Distinction, attesting his Cures, &c. were all (but the Fools who have no Rule of Action) Low-churchmen, Anti-courtiers, and disliked this Claim of Curing in the King, which tended to create too great a Reverence for his Person; and because the Facts were too notorious to be deny'd, set up this Mr. *Greatrakes*, or countenanced his Miracles after he had set up himself, to balance against the King's, who could have no more Divinity in him, by reason of that Gift, than what an *Irishman* and *Conformist* might claim. *Secondly*, from these miraculous Cures (whether true or false) I infer the Reality of the King's; which, though obscured a Time by bungling Imitation and Politicks, does for that reason, at length to all unprejudiced People, shine with so much the clearer Truth, and tells us the Insanative never misplace their Faith in it.

Fourthly, The Parliament 1739, purchased at 5000*l.* Cost, Mrs. *Stephens's* * Medicines for dissolving the Stone in the Bladder: They referred with great Caution, (before the Money could be paid) the Examination of *this dissolving Power*, to some of the most distinguish'd Men in the Nation for Learning and Estate, among whom was Mr. *Chiffelden*, who were to certify,

D 2.

and

* 1*st.* Her Powder, made of Egg-shells, (Scotch or English) six Crucibles, Snails, one Crucible calcined. Dose, $\mathfrak{zj}$. three times a Day, with $\mathfrak{℥ss}$. of Decoction after.

2*d.* Decoction, is making up a Ball of Alicant Soap, $\mathfrak{zvj}$. of Swine-cress burnt, and Honey, adding also Camomile Flowers, sweet Fennel, Parsly, Burdock Leaves, of each an Ounce, which boil in $\mathfrak{℥iv}$. of Water, strain and sweeten with Honey. Dose $\mathfrak{℥ss}$.

3*d.* The Pills, are Snails calcined, Burdock Seed, Ashen Keys, Hips and Haws, equal Parts, burnt; then take $\mathfrak{ziv}$. of Alicant Soap, a Spoonful of his Powder, and beat up with Honey to the Consistence of Pill. Every Ounce makes 60, to be given in the *Morn.* five every Hour, Night and Day.

KING'S-EVIL.

and did, the Truth of this dissolving Vertue, from various Instances (presented to them) on whom it had been notoriously try'd.

So wonderful a Discovery, with such a Sanction, (of the same kind with any Article of our Church) must be the Effect of strong Faith as well as Wisdom, and steadily believed, may doubtless add as much Efficacy and Success. What I infer after this, is, that there is no Harm in believing the *Royal Touch* has cured Multitudes of the Distemper we call the *King's Evil*: Here it is of Matter upon Matter, the Stroaks sensibly made, and immediately to the Part itself; but how the Pill or Powder gets to the Bladder possessed still of their dissolving Power, and leaves all the Passages to it unmolested; or how they work upon a loose Stone there, like *Caustic* or Gunpowder, is, I think, a little more intricate and inconceivable: Besides, here the Public pays 5000*l.* and notwithstanding which Patients still buy: There they pay nothing; nay, receive a Piece of Gold to wear about them, and serves their Life-time.

The Business of countenancing this, or, any the like Empirical Cures; besides the Job in them and their not threatening Principle, may be also their little Help to Trade. *Julapium interalia pro languoribus commercii.* How many Great Men, (besides the Trustees,) have solicited the Belief of the Public to still stranger Things? * *Apparitions, Witches, conversing with the Devil. That Women may conceive and bring forth Rabbits. A dead Man's Hand work powerfully in Cures. That Joshua has restored the Deaf Dumb and Blind.* And lastly, that Politicks like Physick, has found out at Times, very strange sorts of Plots and Conspiracies. A Faith in these Things, and Infidelity in Royal Cures, must be, I think, from the Ascendency of trading Sense, and principle above other Sense. That some Things are adapted, and may be compassed by the Orthodox, and some by the Camaronian Faith.

Fifthly, I think it may be modestly presumed, that Providence would not leave so knotty, so stubborn a Distemper, (*Opprobrium Medicinæ & Medicorum*) without

* Drelincourt. Bishops and Judges. Lord Clarendon. Mons. St. Andre. Quinsay. Potestates and Prefecti.

out Remedy ; and to nothing but Despair : because the most Innocent oftenest suffer ; an Irregularity that does not square with that visible Regard towards all other Creatures. The Gift to Princes, might possibly be to increase our Love and Reverence to them, as the Fathers of the People, in which will consist in a great Measure our Felicity here. And may be a Means of improving our Religion, in which will subsist our Happiness hereafter. If some People, after Touching, miss the Benefit ; why should it not be placed to Undutifulness or Unbelief ? Unworthiness ? or what else Divines tell us, makes our Fastings and Prayers not heard, or unheeded ?

Sixthly, Kings when they are Monarchs, *i. e.* only *One*, to One People, are capable of curing all their Evils, and doubtless this. There is nothing persuades me so much of the Unity of the Godhead, as the Beauty and Order of the Universe ; and the Blessings thence derived : For had every Star and Planet its own Intelligence or Deity, more Curses would descend ; they would be interfering with one another's Orbs ; a Clashing like Good and Evil here between many Kings, from whence can come no Good.

Et Homines pavidī assidue borrficant Ruinā.





III. Of FRACTURES in General.

FRACTURES are some of the most common Cases in Surgery, especially in Time of War ; yet have been hitherto but superficially handled, as though the Cure of them required but little Skill, or was not liable to any extraordinary Accidents.

The following Remarks are designed for supplying this Deficiency, and took their Rise from that excellent Order in the Navy, of Surgeons keeping Journals of their Practice ; an Order that seemed at first design'd to give Preference to Men's Qualifications ; but at present has no other View in it, (either by the Physician, or the Hall,) than retaining some little inconsiderable Fees, to the Footman and Clerk.

I have altered the common Way of Process, where I thought it reasonable to do so, and have chiefly insisted on the Rise and Nature of the attending Symptoms ; which, as in my Judgment, they proceed from the Managing and Treatment of Fractures directly, have from thence their safest and best Remedy.

FRACTURES are either,

Division of Fractures. I. Simple, which are defined by Authors, a Solution of Continuity in the Bone ; and, in respect of Figure, may be Oblique, Transverse, or Longitudinal. Or,

II. Compound, when the *Cuticula* is broke through by the End of the Bone thrusting outwards, or by Wounds made to it ; but may properly also have that Appellation, where there happens a double Solution of the same Bone, or is accompanied with a Luxation.

SECT. I. Of SIMPLE FRACTURES.

Some reckon a Fracture may be produced from an internal, as well as an external Cause: The former is alledged from some Examples in the *Lues* and Scurvy, where the Blood has been found degenerated to such a Degree, as to corrode the Bone, or consume it, in the same Nature as Consumptions are observed to do the fleshy Parts. I have seen a Thigh-Bone emaciated to half the Bigness of its Fellow, and a Jaw-Bone not above one Third of its natural Bigness. And there is an instance in the *Biblioth. Chirurg.* from *Dominique Gayliard*, of the Bones all turning cartilaginous. But yet none of these are properly brought under the Species of a Fracture; at least they require a very wide and different Process from those externally occasioned; and therefore out of our present Enquiry.

But external Causes are evident and common; such as Blows, Falls, Pressure, Wrenches, or Gunshot; and in my Opinion, one or other of these must always concur to disunite the Continuity of a Bone, and make a Fracture. There is one rare and extraordinary Cause of this Kind; and that is, a violent Contraction of the Muscles. This, *Mr. Douglas*, in his Lectures of Osteology, instanced to be true in two Cases there shewn: One, of a Porter, that fractur'd a transverse Process of the *Vertebra*, by stepping over a Kennel with a Burthen; and another, that broke the *Os Humeri* by flinging a Stone.

Fractures happen best in middle aged People; very young, or old Folks, have each their Inconveniencies: In the first, a Quickness of Circulation and Sensation makes the Pain more acute, and subjects them in the Beginning to a Fever, and its Consequents; and in the Progress, too liberal a Supply of Nourishment makes the Fracture more obnoxious to a Deformity, or bunching out. In old People, the Reverse of this; for in them, the Bones having arrived at their utmost Extent and Solidity, grow dry, and the Vessels importing Nourishment, being almost obliterated, there is always a Defect in the Generation of *Callus*. Examples have been in very old People, (Authors say) where the

Causes.

Those by external Accidents the commonest in Practice.

To what Age, and in what Part they happen best.

FRACTURES.

fractured Ends have never united, remaining ever feeble, loose, and painless. A Fracture may be likewise said to *happen best*, when the Solution is but in *one Place*, when it is not near a *Joint*, and when it happens where there are two Bones, and only one of them broke, (as in the Cubit or Leg) a Limb requiring less Art then, either to reduce or preserve it so; because the Firmness of that Bone which remains whole, facilitates the Work: Nor is this commonly subject to so severe Symptoms, as where the Bone is single, (such as the Arm or Thigh,) but especially the last: because here the Muscles being large, the Limb cumbrous and more exposed, the Prevention of Accidents, and restoring a good Conformity, are more particularly owing to Care and Art.

Fractures are also better in the Arm, than Thigh or Leg; because the Position of the inferior Limbs is more disadvantageous and uneasy, and the Quiet of them necessarily more liable to be disturb'd.

Signs of a Fracture.

Among what are reckoned Signs of a Fracture, I can separate but two peculiarly so. The first is a sudden Impotency and Inaptitude of the Limb to move itself, which will immediately succeed a Solution of Unity: For Bones being the Prop and Foundation of Motion, it follows, that the Muscles inserted into them must be necessarily rendered useless: But then it is an Error of those who expect the Parts distant should be under the same Incapacity; such I mean, as moving the Toes on a Fracture of the Leg or Thigh, or Fingers in that of the Arm or Cubit; for let those Bones be never so shattered, it will not destroy the Motion of these, because they imply no Disturbance to the Fracture; which, though it *affects all the Joints above*, does only *deprive the next below it*. The second, and infallible Sign of a Fracture, is, when on handling the Limb, we feel the Ends of the Bone to crush and pass by one another, without Stability to resist any Motion which is made with it; and of this, unless we have lost our Feeling, we can hardly be deceived; it is so much depended on, that without it, neither Pain, Tumor, Distortion, Shortness of the Limb, or any Disparity with the sound one, (though reckoned Symptoms of a Fracture,) are sufficient Indications

cations of themselves, because they all severally do happen to the Limbs on other Accidents, and, in their Turns, may be separate Distempers of them.

A Fracture being known, the Cure of it lies principally in the Treatment of the Part itself. The Method I propose for it, I shall reduce to two general Heads; viz. First, the *reducing the fractured Ends of the Bone*. And, Secondly, the *preventing or correcting Accidents*. These, and these only, are principal Intentions of Cure; the duly compassing of which require other subsequent ones, which contribute a large Share to good Reposition, Quiet, and Ease of the Limb. *Intentions of Cure, principally two.*

By *Reduction*, is meant the smooth and even Reposition of the Ends of the fractured Bone; and is always to be done as soon as possible, to prevent the Pain, Tumor, and Inflammation that may be expected, and which will certainly follow, if it is deferred too long. *First Intention of Cure, is Reduction.*

In order to this, *Extension* is absolutely necessary to restore the Distortion of the Member to its natural Conformity; and is best done with your Hands, both because as great an Extension may be made with them, as any Fracture can require, and also because the Violence of any other Instrument might help on those ill Accidents which it should be our Care to prevent. This is perform'd by placing two Assistants, the one above, the other below the Fracture; the Business of the first is to hold the Limb steady, and at the same time to make such a *Contra-Extension*, as may hinder its giving way to the greater Extension that must be made below, by which the Business of Reduction is chiefly to be compleated. This latter Part should be strong, gradual, and steady; and when your self, by feeling, shall find it made to a Degree fit for rejoining, you are by the Application of your Hands, to press and re-place the Ends of the Bone *smooth and even*. And take this particular Notice with you, That it is your Feeling now that must afford you the true and only Signs that you can or will have of a *smooth and even Coaptation*: For as to its answering the sound Limb in its Shape, Length and Figure, with the Pains being abated after the Dressings are on, and the Patient laid *Extension. Coaptation.*

FRACTURES.

laid in a proper Place and Posture, they are all very fallible and uncertain.

Pain, every one knows, will unavoidably accompany a Fracture, and to no small Degree affect the Patient, though it be well reduced; and if it be not so, yet the Appearance of Ease, when the Limb is reclined on a soft Bed, and at Rest, may deceive us into a contrary Belief; for it is only with moving that it becomes most sensibly affected; and this it will be, whether it be well or ill reduced. And as to its Resemblance with the sound Member, I cannot form to my self any sure Rules of judging after the Dressings are on; for, what Likeness soever they might have had before, it will be lost then; and in this we are never so frequently deceived as in the Thigh; for Pain, with the Weight and Unweildiness of the Member, always sinks the Patient to the hurt Side, and imposes on us a false Length; so that I have seen a Thigh, which by its Appearance in a Cradle, has been thought to be longer than the other, prove, when come to be made use of, an Inch or two shorter. But to return: *Extention performed, and the Bone replaced*, without any perceptible Inequality, *Reduction* is finished.

Second Intention is preventing and correcting Accidents. Under this Head of *preventing and correcting Accidents*, I design not only to include the Dressings and Management that is instantly required, but to take in the whole Process of Cure, from Reduction to Recovery. And, First, *the Prevention of Accidents* will depend very much on a well ordering of our Dressings; which take as follows:

The Dressings. Supposing the Fracture reduced, and Assistants still holding the Limb, we begin our Dressings, by enwrapping the Part round with a Compress of suitable Largeness dipped in Red Wine, or *Oxycrate*, or else, what some think more preferable, an Emplaister; mine is generally *Empl. è Bolo* (*Fiat ex Diapal. acet. Bolo Ol. Rosar. M. S. A.*) or the following *Defensative*.

R. Empl. Diapal. ʒiv. Ol. Rosur. ʒj. Pul. Boli. ʒj. M. & extende super alutam.

In either of them I always choose to add a little Turpentine, because its adhesive Nature brings and preserves the Flesh tort about, and fits it the better for Bandage.

The

The Rowlers are next in Course: The Number universally adhered to are three; two of them single, and one double; and have all the Advantages that any Rowling in the Cure can have. They are used according to *Hippocrates's* Direction thus: The first single Rowler is begun with three Turns at least about the Fracture, and finished upwards with Edgings; the other single Rowler is begun with the same Number of Turns about the Fracture, but rowled to the contrary Hand, and finished downwards: In these you will now and then find it necessary to renverse or turn the Rowler in your Hand, to make it sit smooth in the Descent. Over these comes the double headed Rowler, begun also like the former, on the Fracture, and has one Head carried and finished upwards, the other downwards. These Rowlers are to vary in their Length, in Proportion to the Bulk and Largeness of the Limb fractured; and are to be made of Linnen, (as least stretching,) and to be used in such a Degree of *Tortness*, as may support the Fracture, and yet not endanger ill Symptoms: A Medium not attainable but by Practice.

Compresses and Splints follow: The first are made of Linnen, the other of Past-Board, or Wood, and armed with Tow; or, *Splonia*, which are Cloths folded like a *Ferula*, and spread with *Cerate*; their Number, Length, and Breadth, are to be more or less, according to the Part fractured; and so placed, as to bear equally, and fill up any Vacuities or Slenderness the Limb may have in one Part more than another, and then fastening with four or five Tape Ligatures, beginning on the fractured Part: Among these Splints, (whether the Fracture be of the Arm, Leg, or Thigh) there should be always a very large one of Paste-Board, for the under Part of the Limb, rounded at the Edges, and armed with soft Tow, (if need be) to fit easy in the *Axilla* or *Inguen*, wet in *Oxycrate*, that it may mold to the Shape of the Limb, and should enclose so much of it, as that the rest of the Splints used (which need not be above two more) may be moved and shifted (if Occasion require) without Trouble to the Patient. Some choose to wet all these Dressings in *Oxycrat. cum Albumine Ovorum*; which I cannot acquiesce in, because

I think the Cold and Weight retained by it induces more Pain, and that as they become dry, they grow slack, and expose the Fracture.

*A proper
Position.*

When the Dressings are finished, the *Position* of the Member requires our next Care; for it often happens that although a Fracture be well *reduced*, yet the careless and unequal Situation of it after, subjects it to the same Misfortunes as an ill Reduction would have done: But as Direction, for this must vary according to the Limb fractured, it will be more usefully observed under the Notes that follow on each Particular; only this I shall take notice of at present, that the same Splints (though there be a double or a compound Fracture) should be *only on Necessity* admitted to come above and below the same Joint; for though such a large Splint as I here mean, is of great Support and Service in the inferior Limbs, (the Thigh in particular) yet as we find the Continuance in one Posture only will frequently induce a Stiffness and Rigidity in such Joint, and this the more the Patient is in Years; so when we lend a helping Hand, and fix it immoveably, as it were, by Bandage and Splints, we have Reason to fear an *Anchilosis* by it: The *Synovia* in the Joints, by so long a Stillness and Inaction, both here and in the Luxation, (curved or strait) gluing the Heads of the Bones like a *Callus*. I have seen the *Tibia* and *Femur*, the *Humerus*, *Ulna* and *Radius*, from such a Cause, so cemented, as to appear like one continued Bone. The *Anchilosis* has happen'd sometimes to other Bones, and from other Causes, the Processes of the *Occiput* with the first *Vertebra*, and other times the *Vertebra* among one another, *Scapula* and Shoulder-Bone.

*The correcting of
Accidents.*

I come now to account for, and correct, in the best manner I am able, such ill Accidents as in the Course of Cure, are the Attendants of Fractures, *viz.* Pain, Inflammations, Fever, Tumor, Abscess, and Mortification.

And, first, of *Pain*. This is an inseparable Concomitant of a Fracture; and therefore never to be considered or attended to, as a dangerous Symptom, till it becomes more than ordinarily acute; and then, as it is productive of every other Ill a Fracture can suffer under, (as Inflammation, Fever, Tumor, Fluxion, and the

the like,) it is worthy our exactest Industry to search the Causes, and prevent or correct them. The common Cause of Pain here is the Solution of Unity ; but what particularly aggravates, will be found to proceed either from the Fracture's being waved into sharp Points, or from some Portion of Bone entirely separated ; either of which Accidents, as they prick and vellicate the Membranes where they lodge, fail not to excite this Affection ; else it may be the Effect of *too hard Bandage, too hard Lodging, ill Reduction or Position, or finally, a bad Habit of Body joined to either*, which will, from small Beginnings, improve to a *Fever* ; for Pain, which, in a greater or less Degree, is the certain Consequence of every Mismanagement, is always attended with a Contraction of the Parts ; which Contraction, according to the modern Hypothesis, extending to all the Parts of the Body, lessens the Secretions ; or, which is the same Thing, acting as a *Stimulus*, divides the Blood into smaller Parts ; either of which increases its Quantity, which is the immediate Cause of a Fever. Pain and Fever constantly follow one another, like Cause and Effect ; and by removing one, we seldom fail to subdue the other ; accordingly therefore as any of the afore-cited Causes shall take Place, we must diversify our Remedies : Any separated Portion of Bone, that we think cannot be replaced and reunited, we must cut and take away ; Lodging or Bandage too hard, we must ease ; ill Reduction rectify, by going over our Dressings again ; and if a *Discracy* and ill Disposition be the Cause, we should endeavour to amend it with a Course of gentle Catharticks and Alteratives because not only a Fever will be the Consequence of increasing Pain, but we ought to suspect Tumor, Fluxion, Inflammation, Apostemation, and even Mortification. A *Tumor* here is either the Effect of Pain, of too strict a Bandage, an ill Habit of Body, or *Plethora* ; or from the general Imbecillity of Nature, as in aged, ascitical, or consumptive People. When the latter is the Cause, the Swellings are only *œdematous*, signifying a general Weakness, and will discuss very probably from any particular Part by Fomentations, as it regains Strength. But when the Tumor happens through ill Reduction, or future Mismanagement, an ill Disposition, or a *Plethora*,

FRACTURES.

thorax, it is, as one or more such Causes vigorously concur, attended with a *Fluxion of Humours*; and, as the Blood is saturated with acrimonious or bilious Particles, becomes a *Phlegmon* or *Erysypelas*, which again may not (impossibly) end in *Apostemation*, *Abscess*, or *Mortification*. I have already observed, That the only Methods of correcting Accidents are a good Reduction, a smooth Application of our Dressing, and an even easy Position: But though they are the solid Foundations of Success to a Surgeon, yet the general Indications for correcting them, when present, must not be omitted; I mean such Administrations as tend to the Mitigation of Pain, and Revulsion of Humours, viz. *Venæ-Section*, *Enema's*, or *Laxatives*. *Anodynes*, and a strict Regulation in the six Non-Naturals.

℞. *Decoct. commun. pro Clysteribus* ʒx. *Ol. Cham.* ʒij. *Mel. Mercurial. Syr. Violar. a.* ʒj. *Ol. Anisi.* ʒf. *M. F. Enema injiciendum.*—

℞. *Decoct. hujus* ʒxij. *Syr. Rosar. solut. Butyr. salit. sacch. Rub. a.* ʒj. *Ol. Anisi G.* viij. *M. pro Enema.*—

℞. *Aq. Cinnam. H.* ʒiij. *Aq. Epidem. Syr. de Mecon. a.* ʒf. *L. liquid. G.* x. *M. pro Anodyn. hora somni sumend. Or,*

℞. *Aq. Cerasor. N.* ʒiij. *Aq. Cinnam. F.* ʒf. *Syr. de Mecon. ʒvj. L. liq. G.* xvj. *hora Decubitus exhibend. & repet. pro tribus vel quatuor Diebus.*

Also to direct their Diet to be low, and such as is of light and easy Digestion, (as Gruel or Panada,) abstaining from Flesh; and for a common Drink, Sack-Whey, or, the following; ℞. *Aq. Hord. ʒij. Sacchar. Albiss. Sp. Nitri vel Ol. Vitriol. a.* q. s. *ad gratum saporem. Or,*

℞. *Succ. Limon. ʒij. Aq. Hord. ʒij. Sacchar. Alb. ʒj. M. pro potu Ordinario.* If the Ill should still increase, and the Patient be rendered weak and faint by it, an Alexipharmick should be given.

℞. *Pul. e. Chel. C. gr.* xvi. *Spec. Diamb. f. o. gr.* xij. *Conf. Alkerm. f. o. ʒf. M. F. Bolus sexta quaque hora sumend. Superbib. Coch. ij. Julap. sequent.*

℞. *Aq. Cerasor N. ʒviij. Aq. Peon. C. Theriac. a ʒf. Margarit, ppt. ʒij. Sacch. alb. q. s. F. Julap.*

Or the *Pulvis Alexiterius*, and *Julap. Volatile Ratcliffian.*

F R A C T U R E S.

47

We should likewise, for obtaining this End, relieve the Limb of all that Lumber of Dressing, that by its Weight may incommode it, preserve it in a quiet and steady Position, and prohibit the Increase of Fluxion by a Defensative on the Joint next above the Fracture, and a cooling and discutient Ointment and Emplaister to the Part itself, using also *now* an eighteen Tail Bandage, instead of the circular, for the Conveniency of applying these Topicks daily.

R. U. alb. & populn. a. p. æ. pars exungatur & circa Tumorem Empl. Cerat. Diapalm.

For a stronger Discutient the following Cataplasim.

R. Fol. Alb. Mij. Sem. Lini Fœnugræc. a 3℥. Flor. Chamem. Melilot. a 3ij. fiat Cataplasim. addendo Ol. Rosar. 3ij.

If Erysipelatous.

R. Succ. Sambuc. Ol. Lini a 3ij. coq. ad Succu Consumptionem deinde adde tantillum Lithargyri. Vel.

R. Sp. Vini 3iv. Sacch. Saturn. 3j. M.

If it be simply a Tumor, (œdematous,) we must consider what Remedies we have against Age, an hydropical, or weak and hectick Disposition that occasions it; and the quicker Foresight we have of them, the better able are we to fence against Dangers, which, though not threatening, as to the Patient's Life, may, as to the Use of the Limb. I shall, previous to the Remedies, lay down these two Propositions.

First, That œdematous Tumors do soon appear in imbecillitated Constitutions; for, by whatever Cause the Blood becomes depauperated, whether through Age or other chronical Distemper, the Juices will fluctuate but slowly through their Channels, and the solid Parts having lost also of their Tensity, it cannot but happen that every light Compression will obstruct their Circulation, and cause a Tumor.

And, *Secondly*, such Tumors will be of longer Continuance, and more troublesome to dissipate, than the others by Fluxion, because the Fibres, as they have been a less or longer Time stretched beyond their natural Make, do lose of their vibrating Power, or, in other Words, the Tone of the Part is weaken'd or destroyed.

We are therefore by heeding to these Propositions more easily led to a Remedy, and should no sooner have

Appre-

FRACTURES.

Apprehensions of the Debility and Weakness of a Constitution, but we should immediately slack the Bandage, and change it for the eighteen Tail, though never so small a Distance of Time from the Reception of the Fracture, that the Blood and Spirits may have a freer Recourse there, of which these congested Tumours (as I have said) always argue a Defect; and there will be no fear of a Distortion, from this Liberty, because the Coldness of their Constitutions suppresses the Inclinations to Motion and Uneasiness, which are more familiar and perplexing in brisker Circulations; and the more the Tumour spreads and increases, the less will be their Incitements to disturb it; insomuch that I have wholly laid aside Rowlers, and trusted such Fractures to Compress and Splints, contriving only the easiest Position possible, and helping Perspiration and Strength forward with warm Bathing, spirituous Embrocations, and nourishing Diet.

R. Abyssynth. commun. Alb. Centaur. Hyperic. a Mij. bacc. Juniper. ʒj. Semen. Fœnic. Carui. a. ʒij. contundantur Semina omnia in Aq. Commun. Cong. iij. coquantur ad tertiæ partis Consumptionem. Colaturæ adde Sp. Vini. q. s. & servetur; post usum Foti utimur Embrocatione.

R. U. Dialth. Sp. Vini. a ʒj. Ol. Abyssynth. g. vj. vel.

R. Pingued. human. ʒij. U. Nervin ʒss. Ol. Euphorb. Petrol. a. ʒj. M.

Internally, it will be proper to keep the Body open, and prescribe good Stomachicks and Diureticks.

R. Pul. Sennæ, Crem. Tartar. a. ʒj. Ol. Anisi g. viij. Elect. Lenitiv ʒss. M. pro quatuor dosibus Vesperi. Assumendis.

R. Vin. Alb. ℥ij. sal. Absynth. ʒiss. F. Haustus ad Libitum sumend: Or,

R. Vin. Alb. ℥ij. Ciner. Genist. ʒj. filtretur adde Tinct. Lign. Saffaphr. ʒss. M. Or,

R. Zedoar. Galangæ, Cyperi, Calam. Aromatic. Nuc. Mosch. Cinnam. Macis a ʒss. Cubeb. Caryophyll a. ʒj. Croc. Anglic. ʒj. nodulo ligat. stent frigida infusione Vin. Alb. Cong. i. tempore usus filtretur. capiat. haust. mane, jejuno Stomacho & quarta Pomeridiana. Or,

R. hujus Vin. ℥ij. Rhabarb. ʒij. Infunde & capiat Haustulum omni mane Colaturæ.

Should

Should there be Danger at last of a Mortification from the increase of this Tumour, or from the exasperating Symptoms in a *Phlegmon* or *Erysypelas* or the Greatness of the Contusion, I have considered the proper Applications at the End of the *Chapter of AMPUTATIONS*, to which I refer.

Distortion. There is another Accident behind, to which Fractures are frequently subject, and that is Distortion: This happens by *ill Reduction* at first, or *Mismanagement* afterwards.

From *ill Reduction*, when the Ends of the Bone do not answer *Fibre to Fibre*; and this, in all likelihood, they will be the widest from, where the Obliquity of the Fracture is greatest. There is likewise another Evil, which I think is not commonly meant when we speak of a *Distortion*, though it be a very great one, and may not only produce the ordinary Effect of it, a Weakness and Lameness, but be a Misery; and that is, when the superior Part of the fractured Bone over hangs, and for want of meeting the other to intercept the Superfluity of Nourishment, shoots forth into Processes: I have seen such a one shewn at the Hall, in a Thigh Bone to the Length of six or eight Inches, another Process in the Cavity of the *Tibia*, that wou'd not come out.

From *Mismanagement* a Distortion happens, and that chiefly in the Thigh or Leg, when in our future Attendance, we neglect the Position, and so in Proportion as it is wreathed to one Side, or the Heel is raised or let fall too much, and inadvertently continued so, the Edges of the Bone meet closer in one Part, and recede in the Opposite; which Space or Vacuity filling with the Matter of a *Callus*, brings a Curvity. As this Accident is seldom heeded, or known 'till late, so it is past any other Remedy, but the preposterous one of Breaking again.

The first Time of opening a Fracture, is directed by Mr. *Wiseman*, and others, to be the seventh Day from Reduction, assigning these two Reasons; First, That if the Bone has been ill reduced, or any other Mistake made, it is then seen, and may be rectified. And, Secondly, there is Opportunity to bath the Part, and allay the Itching that has arisen there through the Detention of Humours.

The Purposes here are right, but the Seasons of pursuing them strangely mis-timed, and would be ill Practice to

E

observe;

Mortification.

Distortion of the Bone, how prevented or removed. Distortion owing to ill Reduction.

To Mismanagement.

The Time of opening a Fracture according to Mr. Wiseman, &c.

observe; for, first, if it be apprehended that the Bone is ill reduced, we should correct the Mistake sooner, even the same Day. An Adherence to such a superstitious Septenary Period, when our Process has been wrong, is only inviting the very Accidents we should be careful to shun: And as to itching, it does not happen, or is not troublesome, till Pain abates, which we know is, as the Part strengthens, and the *Callus* confirms; but grant it should, I cannot think the easing of that, is to be put in Competition with the Hazards of displacing and distorting a Bone; as for Instance, in the Thigh, how impossible, almost, is it to open at seven Day's End, without destroying our former Reduction, and all that has been done for the Patient's Security.

The Author's Opinion what Time is proper.

It may be then asked, at what Distance of Time it will be proper to open a Fracture. To which I answer, not until a *Callus* has knit the Ends of a Bone, which, for a common Computation, may be in about three Weeks. Some extraordinary Accident may intervene, that seems to be of greater Consequence, and exacts our Attention before the Fracture: Such may be, very acute Pain, Inflammation, or other aggravating Symptoms already taken Notice of; but what is the most common, though an insufficient Pretence for it, is the Slackness of the Bandage, when a Fracture receives no Support from it; a Defect that I have always thought more safely supplied by drawing the Splinters *tort* from Day to Day.

Callus.

Callus is a Medium that unites the divided Bone, and the Generation of it depends chiefly on a Correction of Accidents and a proper Nutritive Diet; it is a white thick viscous Substance, part of the *Succus Nutritius*, supplied there by the *Fibrillæ* dispersed through the Substance of the Bone, and is a Juice, that by its being so continually at Hand in Fractures, has probably a constant Circulation through the Bones; for if it was to stagnate, I see no Reason but that it might harden to the same Degree it does on Extravasation, and so prevent by this Obstruction of the Passages any fractured Bone from ever uniting; but whether this be so, or that the Marrow * they contain

* The Marrow in large Bones is Red, in the less Cavities White, exhaled thro' the Pores to supply the Bones and help their Nourishment; and by means of the Periosteum have some Filaments of Nerve

FRACTURES.

51

by distilling or sliding through their Porosity, from the interior to the exterior *Lamina*, be the Supply, I cannot resolve.

The former, which is Dr. *Havers's* Opinion, is most probable, and that nutritious Vessels run through their Substance; by their Discontinuity where a Fracture happens, the Nourishment they contained, naturally ouzes from their small Orifices, and spreading or extravasating itself round the Edges of the disunited Bone, cements them with an easy Adherence only the first Day, but in a longer Time the thinner Parts being dissipated by the Heat of the Body, the Remainder becomes so hard a Substance, that the Bone sooner breaks in any other Place, than there again: The Reason of which may be also (if the Strength of a Bone, more in one Place than another, be as its Diameter) that it becomes thicker there. *Boerhaave* says, a Bone consists of 10000 Lamellæ and Vessels, that naturally endeavouring to extend themselves, heave up and cause a Tumor, &c. They ossify from the middle and are hardest there.

From the Nature of this Supply, let us consider of the proper Means to generate a *Callus*, and how we are to correct its Defect of Luxuriancy.

*Callus,
how generated.*

For obtaining this uniting Substance, there are two controverted and very opposite Opinions, in respect to internal Means; *the one* would help forward its Generation by incrassating Medicines, such as * *Lap. Osteocolla*, and other shelly and testaceous Powders; *and the other*, by attenuating Medicines.

The latter of these seems to have the greatest Weight of Reason; for as the *Fibrillæ*, importing this nutritious Juice, are so small as to be almost indiscernible, such Medicines as attenuate must give it an easier Transit, and sooner accomplish the End. Experience confirms this, since we find Bones soonest unite in young People, and in Winter Season; which I think can be for no other Reason than that the Circulation being quicker, the Particles

E 2

of

* *Lemery*, says, 'tis called so from *Osteon* and *Colla*, which is as much as to say Bone Glew. It is a chalkey white Substance, the great Pieces hollow, (the small ones not so,) and grows at the Roots of Trees; there are two Sorts, English and Palatinate. *Dos.* 3j.

FRACTURES.

of Blood are by that Means comminuted, and better fitted to pass through those slender Fibrils to the Nourishment of the defective Part.

On the other Hand, incrassating Medicines, whatever Faith any of our Forefathers have put in them, (particularly *Lap. Osteocolla*, which, some have said, would knit a Bone in four Days Time, I cannot but think must impede this Work, by thickening a Juice too unapt before to pass through so fine Capillaries, and particularly in aged People: for their diminished Heat and Circulation is already so great an Impediment in the forming a *Callus*, that sometimes neither Frictions, strong Fomentations, slack Bandage, a nourishing Diet, and the like proper Means, can prevent an irremediable *Atrophia*.

Authors also for this End order nourishing Diet, such as strong Broths of Veal, Kid, &c. and externally Emplasticks, such as *Empl. stict. Paracels. Oxycroceum*, Gum. Thus, *Myrrh*, *Labdanum*, *Aloes*, and the like, mixed and applied Plaister-wise. These by obstructing Transpiration, and retaining the warm *Effluvia's*, are supposed to increase the natural Heat, and promote a *Callus*: But the best Practitioners (altho' they do not altogether shun their Use,) yet esteem them of little Service; and that the best, if not the only Help necessary and conducive to that End, is the Quiet and Ease of the Limb.

There is an opposite Fault to this Deficiency of *Callus*; and that is its abounding too much; for which I see nothing but Pressure with a thin Plate of Lead, strict Bandage, and a Retrenchment in the Patient's Diet, can be of any Service, an *Empl. de Cicuta. de Ranis cum Merc.* or such like, may be apply'd also for this End, tho' they seem of inferior Efficacy.

Observations on the FRACTURES of the Finger.

A Finger is seldom fractured without a Wound, and must be differently treated, as it is the first, second, or third *Phalanx*.

When it is the third *Phalanx*, or Extremity that is fractured, we need not be hasty in the Extirpation of that Joint, how irrecoverable it may appear at first; for Nature sometimes exceeds our Expectations; and no doubt it is better a Joint be preserved (tho' clumsily cicatrized) than

than lost; nor needs there any other Regard here, than what the Wound would have required, had there been no Fracture, excepting only, that we change the Rowler one Day to one Hand, and the next to the other, to restore the preceding Deflexity.

But if it be the Middle, or the first *Phalanx*, that is fractured, there is a little more Care and Consideration wanted, both to replace the Bone, and to preserve it so.

And, first, the straightening of a Finger is the replacing of it; if any Particle of Bone is an Obstruction to this, or separated, it is to be removed; and if the Wound be so large as to shew the Bone, it should be covered with dry Lint, or a Droffil pressed out of *Tinct. Myrrh.*

To secure the Fracture, I use only a *Plaster Compresses*, and two *Splints*; Rowling I think inconvenient here, in that it wreaths the Finger aside, and makes a distorted Union: The middle Part of the *Plaster* is to be applied on the Wound, and to come round the Finger, (first cutting out so much as may leave room for Dressing). The two small Splints with each a Compress, I place on the upper and under Part; more than these would be troublesome, and indeed cannot be used, especially in the first *Phalanx*; but that the Pressure may not be unequal, or give Room to the Bone's receding that Way, we supply the want with more little Linnen Compresses, one on each Side; and having tied the whole with a couple of narrow Ligatures, place it to the Breast to be out of the way.

This Dressing has all the Benefit that can be proposed: It is of Support enough, keeps the Wound from the Injury of Cold; and by only untying the Ligatures, they are all easily removed, and the Wound presented for your Inspection.

Observations on FRACTURES of the Cubit, or Humerus.

In Fractures of the *Cubit*, or *Humerus*, the Elbow must always be kept clear of the Dressings, that the Fore-Arm may bend to rest easily in a Sling, which is to be placed to the Breast, and the Extremity a little elevated.

This is required in common; but in their particular Treatments they may have a Variation to their Advantage; as for Instance, the *Cubit* requires not so confin'd a Posture as the *Humerus*, but may be suffered to play

FRACTURES.

from the Breast a little, without the Fear of any ill Consequence ensuing; it is on the Advantage of this free Position, and its being so little affected with the Motions of the Body, that makes it of the least Disturbance to the Patient, and subject to the fewest ill Symptoms of any fractured Limb; but the *Humerus* being a single Bone, ought to be more steadily fixed, to prevent the ill Accidents a loose Situation will expose it to; and if broke near its Junctionure with the *Scapula*, it must be treated like a Dislocation. I shall give one Example, both to explain this Case, and farther illustrate the Truth of what I have before advanced, in relation to the Accident that befel it.

I had a Fracture of the *Humerus* sometime ago, as near the Junctionure as I think could possibly happen. After an Extention and Reposition of the Bone, I apply'd a defensive *Plaster* a large Compress that enclosed the whole Joint, some soft ones of Linnen in the *Axilla*, and the Bandage called *Spica*, pinning down the Arm close to the Patient's Side, and raising the *Cubit* in a Scarf to his Breast. Nothing of Splints could be used here, nor do I think that those, or any Thing else, harder or uneasier than what I have mentioned, can be forced on such a Fracture, without disturbing or rendring the Contributions of Nature abortive.

The Patient being old, and at that time in an hydropical State, a very large œdematous Tumor quickly spread through the whole Arm, yet he suffer'd very little Pain from it; which, whether I might account as a Sign of good Reduction, or the Largeness of the Tumor deadening the Sense, I could not then tell; however, I took off the Bandage, believing that might be one great Occasion, with Hopes that Fomentations and Spirituous Embrocations, might help towards its Dispersion; but was in a few Hours obliged to re-apply them, the Limb becoming (as he expressed himself) so heavy and painful a Load, that he could not endure it.

I assisted these external Applications, by keeping him to Diureticks and good Stomachicks, throwing in a Purge now and then, as his Strength would bear; but the Weakness and Tumor notwithstanding continued, stretching the *Cuticula* into Vesicles at several Places, and at several Times, for the Space of three Months; at length

length a *Callus* being formed, a Diminution gradually succeeded; and after a long tedious Use of Fomentations and Spirits, the Limb was brought to some Share, though never wholly to its Use and Strength.

Observations on FRACTURES of the Clavicle.

For the Reduction of this Bone, the Patient is to be seated on a Stool, while an Assistant behind, with his Knee up the Back, and his Hands on each Shoulder, pulls both backwards, at which Extention the prominent Part of the *Clavicle* may be easily pressed down to join with the other.

After Reduction, the *Cubit* must be flung to the Breast, (as in the Arm,) and the Patient very careful in its Quiet and Repose; for though it be easily reduced, it is difficultly retained so, because a steadfast Compression is hard to be preserved for any Time.

The *Clavicle* being less solid than many other Bones of the Body, makes a *Callus* the sooner thrust out; for that is what depends much on a greater or less Porosity.

If we do not unite evenly, the worst Consequence will be, impairing the Motion of the Arm forwards.

The Dressings to this Fracture is a defensive Emplaster first, a large Compress over it, and then Pastboard Splints; the Number of them may be either three or one, as different Judgments shall approve; if *three*, then the two longest, with each a Compress under, are to be placed one above, the other below the Bone; and the third, which need be but very short, is to go cross them directly over the Fracture, the Vacuity between having been first filled with other Compresses, to make the whole bear equally; if *but one Splint*, (which is what I always chuse myself,) it must be cut parabolical, as best adapted to the Shape of the Part; and to make it fit with greater Security to the Fracture, I put, besides the Compresses, (ordinary for filling up the Vacuities, another across that Part of the Splint which is to rest directly on the Fracture, that so the Pressure may be closest there: Over either of these must be brought the Bandage called *Capeline*, described by M. *Le Clerc*, taking Care to fill Arm-Pits with Tow or soft Linnen, to prevent Galling or Uneasiness.

FRACTURES.

Observations on FRACTURES of the Leg.

Though the Length and Conformity of a Leg is very much conserved when the lesser *Focil* is entire, yet it may be so bowed, as to create great Lameness; and this from a heedless Elevation, but more from a Depression of the Heel: Wherefore a constant Care will be requisite for a firm, steady, and equal Position, particularly from the Fracture downwards, for that is most yielding; and a Negligence in fixing it will produce a Curvity; and this the more likely, the higher the Fracture is on the *Tibia*. But such a Depression, by the way, cannot have the same Influence on a fractured Thigh, because the Joint of the Knee intercepts such Motion from it.

The Dressings for the Leg, are as in the general Account: It has only this in particular, That it may be placed in a Case, filling up the void Spaces on each Side, from the Knee to the Ankle, with Compresses to keep it steady, and prevent as much as we can its yeilding to the Motions of the Body.

We must also apply a Defensative to the Knee, the better to prevent Tumour and Fluxion, and place it in a strait Line with the Body; for those heavier Parts next the Body sinking by their Weight, will soon make the inferior Limb in an *Ascent*.

Signs of good Reduction in fractured Limbs, are, 1. A soft Tumor at the Extremity of the Bandage. 2. A great Abatement, though not Exemption from Pain. And, 3. the Appearance of a strait and even Position. When this is the Case, we may submit to our first Dressings, without any Alteration for a Month; then the entire Slackness of the Bandage, and Itching of the Part, will call for an Opening; and having given a Perspiration to it, by a Bath of warm Water, the Dressings may be re-apply'd, or left off, as the *Callus* is found more or less confirmed.

Observations on FRACTURES of the Thigh.

*A Thigh,
the most
difficult to
manage.*

A Fracture of the Thigh is the most considerable of any, the most difficult to manage, and preserve in a good Site; has the worst Symptoms attending it, and the obstinest ends in Lameness: And this,

FRACTURES.

57

I. Because its being the compactest Bone of the Body, *As subject to greater Pain and Fluxion.* and environ'd with thick Muscles, the Force that breaks it must be greater, and consequently the Contusion, Pain, &c. aggravated.

II. Because being a single Bone, and destitute of any other Help to preserve it in a true Position, than what the Dressings give, it suffers unavoidable Disturbance from *More liable to be distorted.* Stooling, and the restless Motions and Longings, that will ever happen from *one long-confined Posture*; and the Applications less effectual to prevent Distortion than in other Fractures.

III. Because the Thickness of the Flesh makes the Bandage less effectual to prevent Distortion, and still worse when they slacken, which will be always before a *Callus* is formed.

IV. The Obliquity of a Fracture is, for the same Reason, of worse Prognostick here, than in any other Bone; for when it is very great, the Pain that stimulates the Muscles, will draw up the inferior Part in spite of any circular Bandage; *and the farther the Fibres in Union depart from their Opposite, the shorter the Limb, and greater must be the Lameness.*

V. A circular Bandage here, makes it very uncertain the ends of the Bone do still continue to meet.

The tailed Bandage in all these Fractures, (simple or compound) and not meddling with Reduction or Apparatus, but in the very Spot he is to lay in, is necessary in my Judgment, to make a good Cure.

To find in what Part of the Thigh the Fracture is, slide one of your Thumbs gently on the Outside, for there the Bone is nearest the Touch; and by giving the Thigh a little Motion at the same Time with the other Hand, you are presently convinced of the Place. *How to discover in what Part of the Thigh the Fracture is.*

Extension for reducing it should be strong, because the Contraction of such large Muscles, as are in the Thigh, would prevent a due and equal Coaptation without it; and perhaps the Ends of the Bone by their Attrition, might break off some Particles, and create a future Disturbance: Yet on the other Hand, there must Judgment be used, a too violent and unnecessary Extention, (and especially of large Muscles, swelled with Blood and Spirits, hazards greater Pain, Fluxion, Inflammation, and Convulsion,

The

FRACTURES.

The Signs of a good and equal Coaptation, are taken from its answering in Length and Shape to that of the sound Thigh, and from the Surgeon's own Feeling, who should move his Thumb smoothly up and down, 'till he is intirely satisfied.

The Dressings for a fractur'd Thigh.

The Dressings for this Fracture take up Time, and should therefore always be in Readiness. In order to apply them, the two Assistants, who make Extention, still continuing to hold the Limb fixed and steady, you are to apply an *Empl. e. Bolo*, the Defensative, N^o 32, or the like, and three Rowlers: Under the first, I include an indifferent thick Compress, directly on the Fracture; and on that Side, the End of the inferior Part of the Bone was felt, for thither it will always have the greatest Tendency. The last is a double Rowler; and within that half of it, which goes downwards, I comprehend a large Compress, thick enough to bring the lesser Part of the Thigh to such a Bigness, as that the Splints may bear equally, and then finish the End below the Knee. The next in Order, are the Splints and Compresses: There must be a large Splint shaped for the under Part of the Thigh, and about three more of less Magnitude, all armed with Compresses, which, for supporting the Reduction, are to be tied fast about the Limb with three or four Tape-Ligatures. Further, it is after this convenient to know where the Patient is to continue, that so the Bed, Pillows, Ligatures, and Junks, which are to lay under him, in the Order they are mentioned, may be placed so as shall best suit Ease and Convenience: For Instance, if a *Cot be spread over the Bed, if the fractured Thigh be outside, and the Pillows the Limb rests on very soft*, they are each more convenient than the contrary; for a soft Bed sinks the Body and Limbs unequally, and hard Pillows sit too uneasy; and on the other Side, keep the Limb from falling proportionably with the Trunk; both of them incommodious and hurtful.

The Junks, of what made, and how used.

The *Junks* (in this Fracture necessary) are two, made of Sponge, or Mop-Staves, armed with Tow, and rowled up in Linnen or Bunting contiguous. The outer Junk must be longest, and reach from the Ankle to above the Hip. The inner must come as near the Groin as will consist with the Patient's Ease. Both are rowled up close on each Side, and fasten'd with the Ligatures that lay

next

next under them. At convenient Distances Pillows are also tied, rounding upon the Thigh and Leg, and the Hollows of the Ham and Heel filled up, to hinder swaying either to the Right or Left.

The *Sole* is of Pastebord, cut near the Shape of the Bottom of the Foot, with Holes pierced through for a narrow Tape, which is to fasten'd to some or other of the Ligatures that tie the Junks: The Use of it, is to keep the Foot upright, and stretch out the *Tendo Achilles*, which otherwise would probably, by long laying be contracted.

A Board called the Sole, and why.

There must be lastly, some Contrivance to prevent the Weight of the Bed Cloaths affecting the hurt Part. In a Cradle it is done by a Hoop or two, passing from one Side to the other; and in a Standing-Bed, by a Wooden Pin, of a proper Height, fixed at the Feet of the Bed-Post.

A proper Position.

Having thus briefly run over the Method and Treatment of a Thigh, the most considerable of all Fractures, I shall conclude it with an Example or two, to supply any remaining Deficiency.

Example of a FRACTURED Thigh.

I. In the Hard Winter, 1709, a Young Man of twenty Years of Age fractured his Thigh, by a *Surging* of the Cable, about four Fingers Breadth above the Knee. I reduced it, and proceeded in the Method before laid down; only instead of Junks, I infixed the Dressings with a Sheet of Pastebord, (that came from above the Fracture to below the Calf,) placed the Leg and Thigh even, and in a Position easy to him, kept the Great Toe in a Line with his Knee, and carefully filled up the Vacuities at the Ankle and Ham with Compresses: I also bled him; and in the Evening gave the following composing Draught.

℞ *Aq. Theriac. Syr. de Mecon. a ʒi. Laud. Liq. g. xvj. Aq. Hord. ʒij. F. Haust.*

The next Morning I found him easy beyond Expectation, (the best Sign of a good Reduction;) and as it is an Argument of the Dressings being well apply'd, and the Fracture

FRACTURES.

Fracture in a right Order, so, after such Assurance, there seems little more required or wanting to Success.

This Case I submitted to the first Applications about three Weeks, only attending to keep the Limb in a due Order, and preserve a Conformity by a small daily Extension. In that Time he became able to walk about with Crutches, and soon after without. Which quick Cimentation was to be attributed principally to the Patient's Youth, and the Coldness of the Season.

II. Was another Fracture, by the Fall of a Tent-Pole, about the Middle of the Thigh. He had lain several Hours in the Cold and Rain before I was brought to him, and the Limb very painful, stiff, and swelled. However, with strong Extension I reduced it: But before the finishing of the Rowler heard the Ends of the Bone grate, and pass one another. From whence it was easy to conclude the Work undone. Yet in regard to the Trouble and Pain he had suffered, I only breathed a Vein, and gave an Anodyne Draught, deferring Reduction till next Morning.

Before the Renewal of my Process, I had been debating the Disadvantage of a circular Bandage. When the Fracture is high, there is Difficulty in supporting a Thigh steady for so long a Time, as it takes up in finishing; there is Trouble and Awkwardness to us in making it; and afterwards, in giving the Limb a proper and easy Site: Disturbances that in my Opinion, leave very great Uncertainty, whether, after all our Pains, the Ends of the fractured Bone meet one another or not. Wherefore I concluded to change for the eighteen Tails; and ordered that, and the rest as follows:

Before Extension I placed the Patient in the Cradle he was to lay in, with the Pillow the Thigh was to rest on under him: Upon this, I first put some long Ligatures for the Junks, then the Junks themselves; other Ligatures to fasten the Splints, then the large Splint and Compress; the * Eighteen-Tail Bandage next; and last of all,

* The Make of this Bandage is described in Sect. 2. of Compound Fractures: p. 66. And though it be called of Eighteen Tails, yet there needs no confined Number, but at Discretion, as may best suit the Security of the Case. It should be so contrived, that the
thickest

all, a defensative Emplaster, because they so follow one another in the Application.

For Extending, I raised his Leg and Knee but a small Distance from the Pillow, while another made a Pressure, or contrary Extention above. The Stiffness and Tumor became now, indeed a great Impediment; but having surpassed these Difficulties, and reduced it, I made the whole smooth, equal and well supported; repeated, *Venesection*, the Anodyne Draught, and forbid any other Food than Gruel, Panada, or the like easy Sustainance.

Next Morning I found a high and quick Pulse, a great Pain and Tumor about the Thigh: But supposing these Symptoms to proceed rather from the repeated Disturbance given to the Part, than any Error in Reduction, I would not meddle with the Dressings, but prescribed as follows;

℞ *Aq. Hord. ℥ij. Spt. Nitri. Dul. g. xxx. cum tant. Sacch. ut Palat. placeat pro potu Ordinario. In Pulmento adjiciamus Mannæ Calab. Syr. Rhabar. cum Cichor. a. ʒiij. Alvus autem non promovens usum * suppositor. Institui quod in hoc Casu præ Enematibus Existimat.*

This procured a Stool; but he nevertheless continued very feverish, restless, and uneasy: The succeeding Day I gave as follows;

℞ *Corall. Ppt. Ocul. Cancrer. a. ʒj. Sal. Tartar. ʒij. divid. in Chart. octo quarum sumat unam quarta quaq; Hora in Coch. ij. Julap seq.*

℞ *Aq. Epidem Mirab. a. ʒvj. Aq. Cinnam. H. Lactis a. ʒiij. Margarit Ppt. ʒj. Sacchar. Albiss q. s. F. Julap.*

℞ *Aq.*

thickest Number of Tails may come on the Fracture; and those Tails rather too long than short, because the former (when thought necessary) may be shortened or doubled in the Using; but there is no Remedy for the other, but by changing. In using this, the Compresses mentioned before, in the circular Bandage, may as conveniently be included here.

* Suppositories are used with more ease sometimes; they should be three or four Inches long, no thicker than the little Finger of the Person; and not thrust above the Sphincter. At Sea we make them of Castile Soap or Candle.

COMPOUND FRACTURES.

℞ *Aq. Lactis* ʒj. *L. liq. Cydoniat.* g. vj. *Sp. Nitridul.* g. x. *Aq. Mirab.* ʒij. *Syr. de Mecon.* q. f. *Hora somni sumend.*

I was very doubtful of him for about a Week; but then the Pain and Fever began to mitigate, and the Tumor fall. After this, with due Management of the Part he gradually recovered from all those ill Symptoms, and was able to walk with Crutches at the End of seven Weeks.

A Longitudinal FRACTURE.

That a Bone may possibly be broke, as, *secundum longitudinem*, I offer this Example. Mr. G—— Master Carpenter of 60 Years of Age, passing by another on Horseback in a quick Trot, and neither giving the Road soon enough, struck the inside of his Left Knee against the other's Saddle. He made shift to ride home again (about a Mile) in very acute Pain, with the Blow, not bearing the easiest Motion of the Limb without loud Complaint.

There was a contused Tumor half way down his Leg, about which, if I pressed close with both Hands, he could then easily bear any other to move his Foot and Leg about. There seemed to me also, with this pressing, a little parallel yielding of the Bone, scarcely discernable indeed, but more confirmed by the Patient's asserting he was very sensible of this yielding; and compared the Fracture, in his own Terms, to what is frequently met with, and called in Timber, *Shakes* or *Clefts*, of four, five, or more Inches.

I washed the Part well with warm Spirit of Wine, brought a Defensative Emplaster round the whole Joint, and bound on with one single Rowler, including a long Linnen Compress on what I thought might be a Fissure; bled him, and laid the Limb bent in Bed, a Position the easiest to him.

Next Morning I found he had been very restless with the Pain, exceeding, he thought, what he had felt in a transverse Fracture of the same Leg that I had looked after about two or three Years before. I guess the Tumor might be increased here; which lightening the Bandage, gave additional Pain, and therefore eased it.

For

COMPOUND FRACTURES.

63

For a Month or thereabouts, he was not able to stir the Knee or Ankle Joint; gradually strengthening from thence with Spirituous Embrocations and Fomentations.

S E C T. II. Of Compound FRACTURES.

The Term *Compound* may signify a double Fracture of the same Bone, or when the Accidents of Inflammation, *Erysipelas*, and consequent Apostemation, has succeeded to a simple Fracture; but Custom has confined the Appellation strictly to such Fractures as are immediately accompanied with a Wound, whether the Bone appear through such Wound, or not.

A Compound Fracture defined.

What I have to say under this Head, shall be on such of them as are occasioned by Gun-Shot; where, if the Circumstances and Method of Cure be well adjusted, there will be nothing wanting to make it equally useful in Compound Fractures from any other Accident.

The Signs denoting a Compound Fracture, are the same with those of a Simple; only as it is accompanied with a Wound, we have sometimes to the Impotency of the Member, and our feeling the fractured Part, the additional and indisputable Evidence of Sight.

The Signs.

The Danger of these Fractures is more or less, as the Bone is more or less splintered; and its Substance lost, as it is nearer to, or farther from a Joint; as the Intrusion of foreign Bodies is more or less, and the Wound great or small, convenient or inconvenient, for their Extraction, according to what Limb it is; and, lastly, as the Habit is good or bad.

Prognosticks.

First, If there be a great deal of the Substance of the Bone lost, we are apprehensive that so large an Interval or Space can never fill up with *Callus* to support the Actions of that Limb; what this Distance is, and how far Nature may be expected to exert itself in the Supply of a *Callus*, I can from my own Experience assign above two Inches; but have heard Relations, and seen Instances of greater, particularly at our Hall; where a greater Focile of the Leg was shewn, from which had been taken away, of the Substance of the Bone, to the Length of five Inches, and that intermedial Space supplied with strong *Callus*. Now, although we cannot rationally expect the like Success of this every where, yet such Examples are Encouragement

Remarks on these Prognosticks.

And first the Loss of Bone.

agement to wait the Strength of Nature in any great Losses of the Bone, and not immediately resort to Amputation, but to be armed with Patience against the Tedi-ousness of Recovery; for as the Distance to fill up is great or small, so must be the Time to perfect it.

*Second,
when the
Fracture
happens
near a
Joint.*

Secondly, If a Compound Fracture happen in or near a Joint, it augments the Danger, because the Muscles there become tendinous; and therefore, *First*, as being endued with a more exquisite Sense, the acute Pain that follows, will always create Fear and Suspicions of its terminating in Fever, Convulsions, and Death: Nor is this the less to be dreaded, if they should not immediately succeed the Infliction; for it is a common Observation, that such Symptoms are not the direct and immediate Consequence of Gun-Shot Wounds, but come after a Time, as the Parts recover their Sense, and the Sloughs separate: *Secondly*, they are dangerous, because the Deficiency of natural Heat will keep them indigested, and in the End make them fistulous: And *Thirdly*, because it is a Chance if such Compound Fractures cure without leaving some irremediable Maim or Lameness.

*Third, Ex-
tractions,
of what
and how
done.*

Thirdly, When much Rag or Filth has entered the Wound, or the Bone is so comminuted, as that several Particles and Shivers of it are to be brought away, a large Wound is safer and more commodious for this End, than a small; and where the Smallness is visibly, an Impediment to Extraction, as in Fractures from Musket-Shot, whose Orifices contract, there is an absolute Necessity of dilating.

But then, it may be remarked of this Extraction, that whatever has been omitted of it, at the first Dressing, which should be made presently on the Infliction of the Wound, is better afterwards left to the expulsive Power of Nature, which more kindly thrusts towards the Orifice any remaining Extraneosity, than can be effected by any dark Search with Probe or Forceps, especially in thick *muscular* Parts: And again, there is not a Necessity that every large Portion of Bone, because loose, should be brought away; no, if it adheres to the muscular Parts, the returning such to its natural Position, will unite; and for the same Reason as any double Fracture of a Bone would; there appearing the same Necessity of removing the whole intervening Portion, in such double Fracture, (let the Distance

Distance be what it would,) as there does for taking away the former.

Fourthly, In reference to the Limbs, considered severally, one Compound Fracture may be worse than another, the inferior than the superior Limbs, the Thigh than the Leg. A Thigh is so unmanagable and with all so fleshy, that any Thing *extraneous* once lodged there, quickly slides through the Interstices of the Muscles, and so alters its Situation, as makes the finding it difficult, and frequently eludes the nicest Search: However, in this, or any other thick muscular Part, where a Bullet or other foreign Body is lodged, we should use our utmost and immediate Endeavours to surmount the Difficulties of Extraction, easiest to be done now when the Patient is warm with Action; and because though such *Extranea* have sometimes lain Years with little Inconveniency to the Patient, there is yet greater Reason to expect that their Lodgment (especially on the membranous and tendinous Parts) will be quickly productive of acute Pain, Fever, Spasm, Convulsions, and Death.

Fourth, a Distinction from the Limbs wounded.

Intentions of Cure. The Rules and Method of treating a Compound Fracture, may be comprehended under four Intentions; some of which regard both Wound and Fracture, as they are considered together; others the Fracture only: And they are, *first*, the Extraction of *extraneous* Bodies; *secondly*, Reduction; *thirdly*, Retention; and, *fourthly*, the preventing and correcting of Accidents.

I. *The Extraction of extraneous Bodies* is our first and immediate Care, and is by no Means to be deferred, lest the Tumor and Stiffness of the Part prove afterwards an insuperable Difficulty: In order to it, the Patient is to resume, as near as he can, the Posture in which he was shot; and the Muscles being as yet pliable and soft, there is great Probability that our Feeling, and Instruments together, will inform and help us to get out all foreign Bodies with Ease the same Way they entered: An Incision (if needful) may be made to facilitate it; but if it has near made its Way through, it will be properest in the opposite Side, or where it would have passed if the Force had not failed.

First Intention to Fractures by Gun-Shot, is Extraction of Things extraneous.

In extracting these Bodies the Forceps should not be opened till you touch them, lest you inclose some Flesh

F

or

or Tendon; that will both frustrate the Removal, and give unnecessary Pain.

When all is extracted that is within Reach of your Fingers or Forceps, it may be proper to inject some warm Wine, or the Decoction of some vulnerary Herbs, to bring away any remaining indiscernable Ossicles or Bits of Garment.

Second Intention, is a good Reduction of the Fracture.

II. *Reduction* follows Extraction: It is the Replacing of the fractured Ends of the Bone smooth and even, performed by a due and steady Extention: But of this, I have spoke sufficiently in the Chapter of Simple Fractures, and shall therefore decline any Repetitions, and come to the Retention of it when reduced; in which we take a different Procedure.

Third Intention is well retaining it by Bandage.

III. *Retention of the Bone in its Place*, consists, I think, in nothing more than a proper Bandage and Position of the Limb. To answer the first of these Intentions, we always chuse that of eighteen Tails, for the Convenience and Ease of daily dressing the Wound.

It is made of three Doubles of strong Linnen sown in the Middle, and divided at each End with two Cuts of your Scissars, a fit Depth.

There is also another Way of making it, and which I think, better answers the Purpose; and that is, tearing off nine or ten Lengths of Linnen: These are spread with such an Edging to one another, as may make the Breadth of it suitable to the Length of the Limb fractured, then an entire Piece of Linnen of the same Length being put on them, they are sown well down together in the Middle.

In using this Bandage, the Middle, or undivided Part, of it, is to lay underneath, or as opposite to the Wound as you can; and that it may be kept longer clean, we are, after every Dressing, to interpose a large Compress between the Wound and it; and upon that Compress, again, it will not be amiss to lay three or four other Linnen *Splenia, secundum Longitudinem*, for the better Support of the Fracture.

All these to be retain'd with the Rowler, each of the *Laminae* enfolding the other regularly; and that done, the Limb is to have a Situation, soft, smooth, and equal.

I should, before applying the Bandage, have given the Dressing of the Wound, as what must precede it; but as it requires a daily Renewal, and as the Treatment will contribute very much towards preventing any ill Accidents, the Order and Alterations of such Dressing, from Time to Time, will be more methodically observed under our next and last Intention.

This is an Intention of large Scope and Implication, including in it the Method of Cure for every Accident those Fractures can be subject to; I shall insist here only on those peculiar to it, as *Compound*, and refer myself for the rest to what has been before more amply delivered of *Simple Fractures*.

When to the Greatness of the Hurt is joined either a bad Habit of Body on the Patient's Side, or ill Management on the Surgeon's, there frequently and almost unavoidably succeeds Pain, Tumor, Convulsion, *Erysipelas*, or Mortification.

IV. Management of the Part is principally the Surgeon's Care to correct; and in which he should be the more solicitous, not only because Negligence reflects Discredit, but because it must be his Skill, in a proper Treatment of the Part itself, that will most effectually prevent or remove all dangerous Symptoms: And for this End, when alarmed with any unusual Appearances, he should look back on the three former Intentions, how well they have been complied with; whether skilfully managed, or not: Either the Bone lies uneven and distorted, having jagged Ends that become uneasy to the fleshy Part they rest on; or, what we ought still to be jealous of, some *extraneous* Body yet behind, pricks on the soft and sensible Parts exciting those Symptoms: Or, lastly, that our Dressings are disagreeable, either as they respect the Wound, or the Fracture.

In answer to these, First, if any acuminated Particles of Bone are, by their Contiguity, the visible Occasion of Pain, Tumor, or Inflammation, (as in large Compound Fractures they often are,) it is easily removed with Forceps and Scissars: But when this is not so apparent, (the Narrowness of the Wound preventing Inspection, and yet the Symptoms still so increase, as to give just Apprehensions of it; or that some loose Body remains still behind covered from our Sight; I say, when we have this Mistrust, and thus reasonably grounded, the Question

occurs, Whether the Wound should be dilated, or not, for the Removal of it: Because the present Circumstances of Tumor and Inflammation, in my Opinion, make a wide Difference from the Wound first receiv'd. For the discussing of this, it will be proper to state the Inconveniencies on either Hand: If such an Incision cannot be proposed, as will render the Search less difficult and disappointing, (as sometimes the Depth necessary, and Parts to be divided, make a Question, especially among large Arteries and Tendons,) then we must avoid it. The Symptoms will be aggravated from the very Thing we hoped a Remedy, adding Pain to Pain, and increasing the Fluxion: But on the other Side, if an extraneous Body be evidently lodged on such sensible Parts, as irritate to these Accidents, then dividing that Tendon, Nerve, or Artery, to extract it, will be of less noxious Portent, than permitting the Exaggeration of Symptoms that directly tend to the Destruction of the Patient.

My own Practice has been, after a diligent Search and Extraction at first, to leave the Remains to the Expulsion of Nature, by an Apostemation, assisting hereto, by anodyne Administrations, mild Cataplasms of *Farin. Avenac.* and a soft quiet Position; for there is no Fear that she will ever sit down easy with so inhospitable a Guest: Nature will, as she is wiser than we, effect the Exclusion of it in her own Time, by a gentler and easier Way, than making a blindfold Incision. The only Inconveniency of Abscesses here, (which is, indeed, a very great one,) is, that the Matter of them, in spite of any Means to prevent it, will slide between the broken Ends of the Bone, and cause them to foul and exfoliate; yet even this may in a great Measure, be avoided, by making a Vent in some depending Part, and diverting the Discharge; so that on the Whole, I conclude, it is sometimes safer trusting to Nature than to ourselves.

Secondly, The Dressings to the Fracture may be hard and ill-apply'd; which, if so, must be amended in those Respects, or our immediate Application to the Wound, may be disagreeable, and excite Pain, &c. by being improper in their Nature, or unseasonable in their Use.

All those are improper in their Nature that harden the *Eschars*, and render the Wound crude and indigested,

such as spirituous and absterfive Applications, which Sergeant *Wiseman*, in his Treatise of Gun-Shot Wounds, condemns in a plain parallel Case; for says he, Take an Issue made by a Caustick, and after you have cut through the Eschar, continue to dress it but a few Days, with a Pea dipp'd in *Tinct. Myrrh.* and it will not be unlike those Wounds, inflame and tumefy, if not gangreen. What has led some to this Practice, he says, was the Blackness and ill Colour of those Wounds, which did not ill resemble a Mortification; but though there may be an Extinction of Heat, it is superficial and very unlike that. And I am convinced, the best and quickest Way of recovering it again, is, by good Fomentation, to cherish the Heat; and immediately to the Wound itself apply Lenients and Digestives: But these again, we must observe, will be unseasonable in their Use, when they increase the Matter too much, or give Rise to a *Fungus*.

For a Digestive, *R Linim. Arc. Ung. Bas. à ℥j. Ol. Tereb. ʒij. Hyperic. Lini. à ʒiv. Or, R U. Basilicon ʒiv. Tereb. Ven Linim. Arcei. à ʒij. Ol. Hyperici ʒss. M.*

This (having first dressed the Bone dry) is with Pledgits to be apply'd warm over the rest of the Wound, a Compress out of *Spt. Vin.* is to cover them, and then your *Splenia* and Rowler, as before directed.

When the *Eschars* are separated, Detergents must succeed to check the Increase of Matter; Incarnatives and Desiccatives to them again in their Order. But of this, more in the following Observations.

Example of a Compound Fracture of the Leg.

A Man aged Twenty-eight, received a Compound Fracture of his Right Leg, by a Splinter in an Engagement with the Enemy: The Wound was large and commodious for Extraction; and through it I presently brought away several loose Pieces of Dirt and Bone: There was one larger than the rest, which not being separated from the Membranes, I replaced, and found afterwards to unite with the Whole. After having clear-

ed the Wound of *Extranea*, I found the Ends of the Bone near two Inches asunder: A Distance that surprized me not a little; but having known as large a Void to fill with *Callus*, I resolved to wait the Event of Nature in it, and preserve the Limb if possible. The Bone I dressed with *Tinct. Myrrh.* the Wound with Digestive, and the Fracture with the same Compresses and Bandage as above, taking particular Care in the Situation of it, that the Ends of the Bone pointed to each other, and that the Whole lay smooth. The better also to keep off a Fever, with its Train of Consequences, I bled him, kept him to diluting Drink and spare Diet.

In a Fortnight's Time, I found some of the *Escars* separated, and with them, at several Times, Officles: He varied in his Disposition during this; and was sometimes very easy, and at other Times full of Pain, and feverish. At length, both increasing on us, a Fluxion of Humours at once distended the Limb from the Knee to the Ankle, a considerable Quantity of bloody *Serum* discharged from the Wound, and some small *Vesiculæ* arose about it.

I began now to repent of not having amputated this Leg at first; and had done it now, if his Fever and Weakness had not put me in Despair of Success; and therefore almost hopeless of any good Issue, I applied round the whole Limb the Cataplasim of *Farin. Avenac.* and prescribed internally the *Cortex*, as follows;

℞ *Pul. Cortic. Peruv.* ℥ij. *Syr. de Mecon.* q. s. *F. bolus sexta quaq. hora sumend. Superbibend. Cochlear. Julap. Analeptic.*

This I found, on the first Opening, had made a vast Discharge through the Pores, and considerably every Day after; which, for that Reason, I continued alternately with Fomentations, till the Limb was entirely disburthened. When the Wound became clean, the Tumor fallen, and the Fever gone off, I made him a laxative Drink, and returned to Incarnatives: These filling the Wound too fast, gave me a tedious Trouble again in the Exfoliation; but that at last being obtained, we cicatrized the Whole in about three Months.

COMPOUND FRACTURES.

71

II. A Compound Fracture of the Thigh.

In our late glorious Wars for the Spanish Monarchy, in the Year 1710. we were returning on one of our Stationary Voyages from Genoa with a Packet to the Spanish Court at Barcelona, and off the Harbour of Toulon, met a French Merchant Ship of Twenty-six Guns, laden from the West-Indies, and luckily for us Captors, had touch'd at Cadix, to add eight or ten thousand Dollars to her Cargoe: Observing us a Pink, they disdain'd going at first out of their Way, till too late, they catch'd the Tartar.

Three or four Days after the taking of this Prize, we had a Prisoner brought on Board with a compound Fracture of the Thigh: The Bullet had entered on the upper and outward Part, wounding the *Membranosus*, and other Muscles, but did not pass through. Before his coming here, the French Surgeon had extracted some Bits of Garment that was carried in by Force of the Blow; but the great Pain that continu'd, especially on any Motion of the Limb, the Tumor, Inflammation, and Way of receiving the Wound, gave both him and me just Reason to suspect the Bullet, and other foreign Bodies, still lodged within, confirmed every Day more to us, by the Pain and Fever increasing, and abundance of bloody Serum from the Wound.

As the Case appeared with all imaginable Danger to the Patients Life, I propos'd an Incision, as thinking we could never incur worse Accidents (how deep or large soever we made it) than what threatened us already: But the Gentleman being of Opinion, such Incision would be giving unnecessary Pain, and that the finding the Bullet under these Circumstances would be almost, if not altogether as difficult after, as before, we declined it, and gave internally Anodynes, and the *Mixtura Febrifuga in tempestivis*.

To the Wound we used a short soft Tent, moistened with a Digestive, an Embrocation of *Ol. Rosar.* warm, and the *Cataplasma resolvers*, the Bandage for a compound Fracture, and a proper Situation.

The Pain notwithstanding became in a manner agonizing; and what compleated the Misfortune, instead of Incision, a thick dry Tent was thrust in to dilate the

COMPOUND FRACTURES.

Wound, and give a free Vent to this bloody *Serum*, which was now in greater Abundance.

This had all the ill Effect that could be; the Tumor and Inflammation were extravagantly increased by next Day, the Limb convulsed, and a *Spasmus Cynicus* followed.

We made a warm Embrocation of the affected Part, and down the Spine, with *Ol. Rutæ Succin. a. p. æ.* breathed a Vein, and gave a quieting Potion; but to no Purpose: He continued so twenty-four Hours, and died the fourteenth Day from receiving his Hurt. What I shall further remark from this, and other the like Observations I have met with, is, First, that in Gun-Shot Wounds of the Nervous, or other very sensible Parts; their worst Symptoms seldom appear immediately, because, as I take it, the *Eschars* supply for the present, that Fence they naturally had against external Injuries; but when these are separated, they become exposed to the Intrusion of Air, and more injurious Applications, (scarce any Thing agreeing with them,) and then Convulsion, &c. ensue.

And, Secondly, When Convulsions do happen, particularly the *Spasmus Cynicus*, it is of fatal Prognostick, even when the Wounds to all outward Appearance, are very inconsiderable. This I have known prove true, when the Gun-shot Wounds it was subsequent to, were in the Leg, the Foot, the Jaw, and other Parts of the Body.

III. A Compound FRACTURE of the Cubit.

T. Y. received a small Shot through the inner Part of the Cubit, about four Fingers Breadth below the Joint, fracturing the *Radius*. After I had extracted what Bodies I could find, that were carried into the Wound, (which were many,) I dressed each Orifice with a small short Tent in a Digestive, applying an Emplaster, Compress, and Bandage, which has been already mention'd, and placed it to his Breast: For a few of the succeeding Days, I made use of a Fomentation, and embrocated the whole Fore-Arm with a discutient Liniment, to further Digestion, and resolve the Hardness of the Tendons that accompany'd it: But Pain encreasing, an Inflammation spread itself to the Joint, possessing almost the whole Inside of the Arm.

I made several Scarifications round this inner Orifice, and fomented it well ; which had the desired Effect, gave a Breathing to the Wound ; and in a few Days the external *Eschar* separating, the Tumor dissipated. I then altered my Dressings, by Addition of *Bals. Virid.* to mundify and hinder too quick a filling up of the Wound, which would have impeded the Extrusion of some little Jags of Thread and Rag, that I now and then observed to come away with the Discharge. When that Fear was over, I threw out the Tent, and cicatrized.

I shall finish this Observation with an Excursion on the Use of Tents.

Of TENTS, or FLAMMULA's.

Mr. *Belloste* condemns them heartily : He says, the End proposed by them, *viz.* keeping open the Orifice of the Wound, conveying Medicines to their Bottom, furthering the Extrusion of extraneous Bodies, and imbibing the Matter generated, are so far from being performed, that they are an Impediment to it. And to prove this, he abounds with Relations of the contrary Consequences, to wit, great Pain, Inflammation, Convulsions, Abscesses, Gangreen, sinuous and fistulous Ulcers.

Mr. Belloste's Opinion on Tents. Vide *Hospital-Surgeon, V. I. p. 1, &c.*

But notwithstanding his Authority, I think they are not to be *universally* exploded ; a soft and short Tent, for a Time, is in many Cases not only useful, but necessary. Those ill Symptoms, he, in so many Observations, repeats to have happen'd from them, have had other conjoint Causes, and when apply'd to Tents, should rather have been ascribed to their too great Length, Thickness, Hardness, or Continuance ; for in those Respects, they may be, and frequently are, exceeded to a Fault.

Where they are proper.

I shall reduce the Whole of this Subject into two general Cases ; where the Use of Tents seem preposterous ; and yet in which they are the most (though inexpertly) used ; and that is, when the Quantity of Matter in a Wound or Abscess is very large, or when it is little or nothing.

Where improper.

In the first Case Tents manifestly do Hurt, the Matter being *pent in, as it were, with a Spiggot* ; and though we should make them smaller than the Diameter of the Orifice of the Wound, yet they, by imbibing the Matter,

swell

swell up to it, and equally hinder the Vent and Eruption; and from this Retention, both on Account of the Pain it gives, (and also of that Maxim, *That Corruption breeds Corruption,*) the Quantity will be increased, and of Necessity translate itself (when thus stopped) elsewhere; and so Apostemation on Apostemation may prove the Reward of our Inexperience: Whereas, throw aside Tents, and only make good and advantageous Compression in your Rowling, and there is no Fear of the Wound or Abscess closing, before it is emptied of all or most of the Pus or Sanies collected; but if there should, Dilatation by Incision better secures our Fears, and will be a much more eligible Expedient against it than Tents.

Again, in the other Case, when there is little or no Matter, and the Wound is what we call indigested, the Hurt that Tents do is obvious; for as it is the Pain that attends Wounds which makes them, for the first Days after Infliction, a little inflamed and tumefy'd, and which, in other Words, is but the crowding of Humours, or Distention of the Vessels from that Attraction, soft and easy Applications dispose the Wound to digest, and those Accidents to disperse and dissipate: But if by a wrong Method, (such as Tents,) we pervert Nature's Operation, the sensible Parts are further irritated, and Pain increased, &c.

It will be necessary then, in these two common Cases, and also in very sensible Parts, wholly to abstain from the Use of Tents; but in penetrating, and in deep Flesh-Wounds, where the Quantity of Matter generated will of Necessity be out of Proportion to the outward Orifice; soft short Tents help the Digestion of the inward Wound, further the Extrusion of extraneous Bodies, and convey the Medicines proper to absterse, cleanse, and heal.

They are made for Dilatation of *Rad. Gent.* or *Aristoloch*; or else of Sponge thus, Dip a Piece in melted *Mellilot*, and then squeezed between two Trenchers, its put by for Use; and may be cut to what Length and Bigness you please. Fistula Tents are down of Lint beat up with White of Egg, and dry'd on a smooth Board, cutting them out afterwards, and arming with what Medicine you please.



IV. FRACTURES of the SKULL.

FRACTURES of the Skull, are, perhaps, more abstrusely treated of by Authors, than any other Part of Surgery. All who have hitherto writ on them, have rather increased, than removed the Difficulties in the Way to the right Understanding and Management of them: They have multiply'd a Parcel of insignificant Terms and Names, without any Ideas annexed to them; and falsely deduced the Symptoms appropriate, and Necessity of the Operation subsequent thereto. This I shall endeavour more fully to explain in the Sequel, and substitute a Reasoning and Method more adequate to Truth and Practice.

*M. de la
Vaugnion.*

Sorts. Ancient Authors have reckoned up, or rather divided these Fractures into a Multitude of Sorts, distinguished by proper Names; which, *M. Dionis* says, he has reduced to twelve; and those again into three, to wit, *Incisions, Cracks, and Contusions*: Of these, the former have more ordinarily the Process of Wounds; and unless by the latter, be meant *Depressions*, it is an unintelligible Term: And therefore I chuse to make my own Division, viz,

A *Fracture* or *Fissure*, a *Contra-Fracture* or *Fissure*, *Division* and a *Depression*: Names which carry their own Explanation, and comprehend every Sort; which, as they stand further distinguished, express more a Variety of Cause than any Thing else, and are mere Amusement. Of these, the *Contra-fracture* or *Fissure* is something particular; being opposite to that Part of the Skull where the Blow

Blow was received ; and is supposed to happen from a Concussion of that small Portion of Air contained within-side, (where the Force of the Blow driving, and the *Sutures* being very close, it flies to the opposite,) and meeting Resistance there, occasions the Fracture. What may come under this Denomination also, is, when the second Table is broke, the first remaining whole : A Case that may happen, and to which, the second Example at the End of this Chapter has some Resemblance.

*The Causes
of fractured
Skulls.*

The Cause of Fracture here, may be by any cutting Instrument, but the commonest are *Blows*, or *Falls*. The Convexity of the Skull is an additional Strength against them ; because the Pressure, in such Strokes, declines towards the Cohesion of its Parts ; but still not sufficient to overcome every Violence, frequentest on the *Bregma*, and upper Part of the *Ossa Temporum*, because thinnest, and worse nigh the *Sutures*, by Reason of a Communication of Vessels.

The Symptoms attending them immediately.

The Signs of a fractured Skull must be separated into those that immediately happen, and such as succeed not till after a Time. Those that immediately happen, are either evident to Sense, or deduced from Reason : They are evident to Sense, when the Largeness of the Wound makes the Fracture visible, or is sufficient for a Discovery by the Finger or Probe, or when without a Wound, the Depression is plainly felt. All other Signs accompanying them are Deductions from Reason, and are taken (when the Scalp is entire, and those Demonstrations of Sight and Touch wanting) from a Comparison between the Circumstances of receiving the Hurt, and the Symptoms conjunctly.

The Signs that apply to our Reason, are Vomiting, a Dizziness, and Bleeding at the Nose or Ears ; and the more violent are, when (with them) the Patient also lies Senseless, Stupid and Speechless. All, or some of these follow a Fracture immediately, and the Measure of a good or bad Prognostick is taken according to their Degree, and the Time of their Continuance.

Symptoms more remote.

Those that arrive not till after a Time, are, *First*, The Patient's feeling a Pain on biting any hard Body ; and, perhaps, an often reaching of his Hand to the afflicted Part,

FRACTURES of the SKULL.

77

Part. *Secondly*, When a Dulness of Memory and Understanding, or a *Coma* follows. And, *Lastly*, when Fevers, Deliriums, Convulsions, or Palsy, which do often unhappily succeed, and are the Forerunners of Death.

It is the first Order of Symptoms, *viz.* Those which presently appear on the Hurt, that I am at present concerned to examine; and what I am able to say on them, in Reference to the Prognosticks and Cure, I shall deliver by way of Answer to the following Questions:

First, That since the Signs enumerated will equally *A Concussion* appear in a *Concussion*, whether it be, or be not attended *sion and* with a Fracture, how shall it be known when they *Fracture* are the Indications of such an Accident, and when *have the* not? *same Symptoms.*

Secondly, Why a Concussion attended with those Symptoms, should not require the *Terebra* as much as a Fracture? In answer to the first of them; though it be true, that the same Symptoms happen in a Concussion with or without a Fracture, and that there is no Certainty of arguing from one to the other: Yet if on examining and comparing the Blow with the Symptoms, they are severally found great and violent, it is incumbent, Practitioners think, to dilate the Wound for more certain Information: And when we do this, it should be rather by a cross Incision, than any other; because if right in the Conjecture, it can with Ease be stretched to where the Fracture tends; or if not, 'tis a Wound (of any that are proposed for this Purpose) the most easily re-united.

To the latter Question, *viz.* Why a Concussion, under the same Symptoms with a Fracture, does not equally require the Operation of the Trepan; we cannot resolve or determine ourselves as to any particular Case better, than by consulting what is proposed by the Operation, the Reasons for, and the Objections against it.

The chief Design of this Operation, is said to be for *What is* discharging Blood or Matter extravasated between the *proposed by* inner Superficies of the Skull and *Dura Mater*; the *trepanning* Retention of which would occasion these Symptoms *the Skull.* have

FRACTURES of the SKULL.

have afore recited, sphacelate the Brain, and kill the Patient.

Now this being the Foundation on which the Operation of the Trepan is grounded, the Truth of it should, methinks, be better established, to vindicate that Practice in every Fracture of the Skull, than, I must confess, it appears to me to be.

An Extravasation between the Membrane and Skull, no certain Consequence of a Fracture.

For, *First*, That such an Extravasation is there, or does inevitably follow on a Fracture, I cannot, from my own Experience, so constantly assent to. I have met with such a Case once; but it was from a Laceration of the Membrane, and mortal: But from others that have happened under my Care, (and nigh the *Sutures* too,) I am convinced such Extravasation between the Skull and Membrane is seldom the Consequence of a Fracture: And if so, then whatever may be said in Defence of it, when to relieve the Membrane so oppress'd, yet here (which will be the Case of far the greater Part of Fractures) the alledg'd Necessity of the Operation ceases, at least it proves, in such, of no Significancy to their Amendment.

Secondly, If an Extravasation must follow, both on a Concussion, and a Fracture, as from equal Symptoms, we have equal Reason to suppose, then there seems a greater Necessity for the Operation in the former, than the latter, though not practised; because the latter may possibly now and then be large enough for the Transmission of such extravasated Blood, and answer the End of a Perforation: Whereas in a Concussion without a Fracture, we are sure it must be fatally confined.

Thirdly, Such Extravasation must happen either from the Skull lacerating the *Dura Mater ab extra*, or an Eruption through it *ab intra*; which, considering the Toughness of that Membrane, the Stroke should be mortal that effects it.

Fourthly, It is difficult to conceive, after allowing such an Extravasation, how it will account (abstractly consider'd either for immediate or subsequent Symptoms.

And, *Lastly*, I would be resolved concerning this Extravasation, whether it of Necessity must lay near the Fracture, or not sometimes in a distant Part? Or, that

that if at first it were nigh, yet while it continues fluid, it may not settle farther, especially to Parts depending? And how, when it is coagulated at a Distance, the Operation conduces to its Discharge? For the reconciling of these preliminary Queries will be always necessary to justify the Operation.

I have only started the Objections, and shall leave their Removal to others more convinced of the Necessity of the Operation in all Fractures than myself, and proceed now to explain my own Notions about the Original and Cause of these Symptoms, with a Method more suitable to their Relief.

The Symptoms fractured Skulls are incident to, whether immediate, or at a Distance, do not proceed from Fractures separately considered, but from the Concussion made at the same Time in the Brain by the Blow that occasioned them; for the Substance of the Brain being a Congeries of Vessels of soft and fine Texture, the Violence that can break so solid a Bone as the Skull, that contains it, must indisputably rupture some of those Capillaries, and cause an Extravasation within, at the Fountain of Irradiation and Efflux of the Spirits: Whence in the Beginning comes Vomiting, Bleeding at the Nose and Ears, Stupidity, and Speechlessness; and whence, in further Process of Time, if proper Means of Relief be neglected, come Comas, Senselessness, Lethargies, Deliriums, Palsies, and Convulsions: For as the Original of a Nerve or Nerves, happen to be divided, obumbrated, or affected with any Heterogeneity of Particles, it is an undeniable Consequence, that the different Sense or Actions they serve to must suffer and fail, or be involuntarily and preter-naturally exerted.

Mr. Turner's remarkable Case, p. 223. still more confirms all I have advanced. He tells us, "This fractured Depression, would hold almost two Ounces of Liquor, and yet observe, after Trepanning, the Membrane appeared fair." From which I argue, that if so uncommon a Depression, gave no Sign of Extravasation between the Membrane and the Skull, (the Presence for Trepanning) we may much more safely conclude, there is no such thing to be found in common Fractures; or those of less Depression and Violence.

And,

FRACTURES of the SKULL.

And, *Secondly*, When the Membrane appears lacerated, or sunk by so extraordinary a Depression, we may pronounce it mortal, though grievous Symptoms do not presently appear; and this not so much from the Wound of the *Meninge* perhaps, said to be curable, as from the greater Force of the Blow; for the deeper and more the Brain is offended the less Sign: The Person becoming indolent and senseless, the pricking of a Nerve exciting worse Symptoms than the Substance of the Brain.

“ *Ten Days from the receiving the Hurt, and five from the Operation, Mr. Turner found a greater Discharge on the Rowler and Dressing, then could be expected, and upon search found a fœtid Matter, erupting through the Dura Mater, from the Substance of the Brain: Not by any preceding Inflammation, but bursting evidently through a Grain or Papilla, of new incarned Flesh; which by an Apertion of half an Inch long, (the Diameter of the Bore:) He gave a freer Vent to, discharging a vast Quantity of stinking Pus; and at times some Particles of the Brain.* ”

“ *Lastly, The Patient lived from February to May, with more or less of this Discharge, and without any Symptoms of very ill boding Prognostick, till two or three Days before his Death, and then was seized with Convulsions, on the contrary Arm and Leg: From the first Paroxysm, also the Arm of the affected Side grew Paralitick.* ”

“ *On opening the Head after the Child's Decease, he found no Abscess, as might have been expected, but the larger sanguiferous Vessels on the Surface of the Dura Mater, at the Anterior Lobe, and over both Hemispheres, were replete with a transparent Matter, the Brain itself at the same time (the Cortical Part Oblong Marrow Ventricles and Cerebell) to the Eye firm and untainted. And which is very remarkable, what Deviation there was from a sound State, was at the contrary Side, on the left Hemisphere, where a little of this Pus was observed shed, not only on the Cortex but substance of the Brain.* ”

This Case so circumstantially described, (and which, if I judge right, will attend most or all fractur'd Skulls,) afford, I think, a Variety of Inferences in Support of what

what is advanced, viz. *The Doubtfulness of that Rule and Reason which Trepanning of Skulls is built upon.*

There may be observed from this Relation, That what Extravasation followed from the Fracture, was entirely within the Substance of the Brain, confirmed in the Eruption thence, and afterwards in the Dissection, when this extravasated Blood was converted into Matter, and absorpt by the Vessels that were found turgid therewith. The principal Parts, *Lobes, Cerebel, and Cortex*, at the same time in a manner clear, what Deviation there was from a sound State being on the contrary Side, altogether shewing, that not one fractured Skull in twenty is benefitted by the Operation, rather more hazard of a Recovery, which when it happens, at any time after Trepanning, would I imagine, have happened without it.

First, I would ask, after what manner a Perforation through the Skull, can bring relief to the Brain in these Cases; even though you puncture the *Dura Mater*? This Wound must be small and would soon close up, and without opening, the Blood or Matter cannot transpire to discharge by the Perforation; besides, the Circumstance of Dressing, Rowling, and a constant standing Position, or Inclining thereto hinders the Tendency, rather impacts than furthers the Extrusion. To which add the Air and Cold, with daily Dressing, more likely helps on the Conversion to Matter, that was so plentifully absorbed here and brought on tragical Symptoms. Mr. Turner observing, "*That as the Matter of Apostemation was imbibed by the Vessels, there succeeded feverish Effervescence Restlessness, Head-ach, and at length impressed a Taint upon the Nerves,*" whereas had there been no Operation, it had been taken up more slowly and gradually, consequently the Patient had a better Chance to survive.

Secondly, in making the Operation, I should be glad to know what Rule to go by, (supposing an Extravasation and it could be vented thus;) to hit the Part properest, or else it is Labour in vain, or worse: In this Case, we find the Membrane was clear, and what deviated from a sound State, was on the contrary Side to the Fracture.

FRACTURES of the SKULL.

The Nose, Mouth, and Ears, that give the Signs of a Fracture, point out also the best Way we have of relieving the Symptoms ; how often have we seen Imposthumes and Hæmorrhages, in Relief of this principal Part the Brain ; and were Warmth cherished to the Ears and Head, the *Clypeum* kept whole. *Errhines* used to force from the Brain and *sinus frontalis*, where * Depurations are lodged ; would with Shaving, Spirituous Embrocations, a soluble Diet, Issues, Setons, &c. work with more Success for the Patient, than Trepanning : There is nothing we can do of this kind, but will be *dependent* in respect to the Brain, a favourable Situation with the Circulation, to answer the Purpose, when they are recoverable.

Mr. Turner's first, second, third, and fifth *Corollaries* upon this Case, to justify the Apertion of the *Dura Mater*, and that Wounds of the Brain are curable, is a little improper ; and against the Purpose, *because the Child died.*

Thirdly, There is no Rule that I can conceive, whereby to judge, that this or any other Extravasation in the Brain must necessarily apostemate ; and not be absorpt like the Matter of an *Eechymosis* externally. The Trepanning, probably long tedious Dressings, and exposing to the Air and Cold, helps the apostemating that by conserving the Warmth, and keeping the Skull whole had not happened : But supposing the Brain had an Apostemation or an Extravasation to get quit of, may it not be better promoted by the Emanctories of the Brain, than by Trepanning ? There are *Valsalvas foramina tympani*. *Du Verny's* Cavity or Channel, from the Barrel behind the *Tympanum*, going to the Roof of the Mouth : And whence by some Men its taken notice of, (when the Membrane is not quite closed,) can force Smoke from the Mouth through the Ears. There are also Channels terminating in the Nostrils, Holes in the *Ossa Temporum*, *Os Sphænoides*, and *Ethmoides*, more serviceable, and to the purpose, by being depending and natural Passages, than such a foreign Help.

Fourthly,

* Mr. Wiseman, p. 395. has seen even Matter out of the Nostrils.

Fourthly, Reasons that urge for the Operation after Hurts of the Brain and Symptoms consequent, urge as much when the Membrane is found fair, to go on still and penetrate a Practice illaudable, a Wound through the *Meninges* being of more Danger than the Fracture itself. And what is worse, when you have penetrated, you are still all in the dark, as to what possible Help it can afford, for the Matter-of any Apostemation in the Brain (supposing it certain) can vent there, there is only the *Systole* of the Brain assisting, which while the Membrane is whole, is as much towards any Part as the Perforation, rather more, we guarding against its coming that Way by Dressings and Bandage.

Fifthly, To avoid the closing of the Apertion, and so further the Discharge; it was thought proper, Mr. Turner says, to keep the Orifice open, with a Sponge, Tent, or a Canula." This may amuse and recommend the Dexterity of an Artist, and may have its Advocates; but if what I have already said of the Operation, Bandage, &c. have any Weight: they drive harder upon the Impediment of a Spiggot.

On the whole, though I do not approve the Practice, I would not be so vain, as to advise at all times forbearing the Operation; Surgeons of common Reputation must beat on in the old * *Spanish Road*, till better Authority annuls.

Sixthly, If the Dulness, Slumberings, and Stupidity, often seen at receiving Fractures, approach in their Nature and immediate Cause to that of an Apoplexy, where the Extravasation is within side the *Meninges*, and not without; then like that, it is reasonable to think, Revulsions will contribute more to the Cure than the Operation of the Trepan; or that the Trepan is as necessary in one Case as the other; and what confirms me in this Sense is, That I have known both Fractures and Concussions, especially the latter, to have been relieved and recovered without trepanning, and that by large Bleeding, Enema's, Purges, Fontanels, and

G 2

ner-

* Alludes to Jack Spaniard, who for many Years after we had taken Minorca, continued to travel in the old, rocky, uneven, Catholic Path, rather than a new and fairer one made by Hereticks.

FRACTURES of the SKULL.

nervous Administrations; which either derive the extravasated Blood from the Brain, carrying it off by the Emunctories and Bowels, much more likely so to do when both Cold and Air are excluded, which all allow to be injurious to the Membranes and Brain, or fix an Abscess on some less principal Part.

To go on, the Patient lived from *February* to *May*, and died Convulsive.

*The Cause
of Convul-
sions here.*

The Learned assign the Cause of Convulsions to an Admixture of Meeting or Particles incongruous and disagreeable to the Membranes, Nerves, and Nervous Fluid. This Incongruity, as some Causes exist, especially Poison, lie in such Particles, being sharp-pointed and velli-cating, bearing some Resemblance to those external Instruments which more certainly affect it by pricking on them, and seldom in Repletion or Exinanition, particularly as to these which succeed Fractures of the Skull. We find that Convulsions do not immediately seize, but after a Time, when it may be supposed the extravasated Blood has attained such an Heterogeneity; and the same Sort of Particles communicated to the Blood, produce Fevers, and in the Circulation Shivering, Vomitting, &c. Symptoms, which, as they appear weaker or stronger, are judged a less or greater Concussion.

*In what
Cases Tre-
panning is
necessary.*

Though not one in five of these Fractures call, in my Opinion, for the Operation, yet, according to present establish'd Rule, there are some Circumstances that may make it more defensible at one Time than another.

Any extraneous Body sticking fast in the Bone, or a *Depression*, whether of one, or several Pieces, the former cannot be removed, nor the latter elevated (its said) without it: And besides, if at any Time an Extravasation may be expected, it is most probably when the Bone presses on the *Dura Mater*: Yet, even here, Depressions have done well without it, and unless a Man could forsake his Sight and Reason for Authority, there arise some insuperable Difficulties in an immediate elevating any depressed Part of the Skull.

*Difficulties
in eleva-
ting the
depressed
Skull.*

First, The depressed Part commonly remains firmly contiguous with the Whole; and being solid in Adults, will like Iron, or other hard malleable Bodies, require as much Force to straiten, as bent it: Besides, in restoring
to

to a Sphericity, we are narrowing the Diameter; which consequently augments the Difficulty.

Secondly, The Elevator it is attempted with must be of fine Make, or it will not be so safely introduced between the inner *Lamina* and *Dura Mater*; and the finer the Instrument, the less Force can be used; or if more could, there is still left a greater Obstacle to contend with: for the *Diploe*, which divides the *Laminae* of the Skull, will intercept and hinder any Effect of it on the outward Table.

The *Tirefond*, (an Instrument like a Cooper's Piercer) or the *Terebellum*, *Terebra* or *Trepan*, should be fixed on the depressed Bone, to help, in Conjunction with the Elevator, to raise it, but altogether is full of Difficulty. It may be asked, to what Purpose then is the Skull traphined at all, either when any extraneous Body strikes there, or when depressed? Why, in the first Case, its said, the Body may be so fixed, as to be past any other Method or Removal: And in a Depression, (if at any time) there is Danger of Extravasation, and accelerating of fatal Symptoms, judged of by the Depth and Bearing which the Bone makes on the *Dura Mater*. In the first Case, say they, it is visibly wanted; and in the latter, thought no ill Practice, to repeat the Operation of the Traphine, until the whole depressed or central Parts are removed, as threatening a greater Mischief.

The Operation.

The Operation, when undertaken, is directed to be near the *Fracture*, in order to raise any Part of the Bone depressed depending, for the more favourable Discharge of what is extravasated: *In a close Place, and by Candle-light*, Air, according to the Aphorism, being an Enemy to the Brain and Bone: *Quickly* also, because procrastinating is dangerous; and *not on, or night*, the Temples, *Sutures*, or Productions in the Middle of the Occipital or Coronal Bones, because the *Dura Mater* strictly adheres to them, and there would be Danger of tearing it with the Instrument. If the Bone should stick, clear it with the *Myrtifolium*.

FRACTURES of the SKULL.

Here I would ask, if the Perforation cannot be depending, nigh the Fracture or Depression; whether another Place even an opposite be eligible? and if not, for what Reason? I would also ask, why the Membrane is not to be penetrated until Signs of an Abscess appear, as in the remarkable Case? since the extravasated Blood that made it, equally requires*.

The Night before the Operation we are to make our Way clear to the Skull, by extending either Line of that cross Incision, (supposed to have been made at first,) and separating entirely one or more of the Angles, as shall be thought requisite to answer the Purpose before us.

It is usual to stop the Ears with Cotton, for preventing an ungrateful Sensation; and then smearing the Crown of the Trepan with Oil, for its easier Motion; apply it first on the Skull, with the Pyramid or Pin in, till an Impression be made, and then leave it out; lean hard on the Top with the Left Hand, and turn round with the other.

The Trepan in the Beginning is best for Dispatch, and fixing the Crown; but the Traphine is safest, to conclude the Operation with; because the *Manubrium*, in this latter, is fixed, and moved from Right to Left, and so back again at half Turns; the Conveniency of which, for finishing beyond the other, is, that we have a greater Command of the Instrument; and as the Perforation is found nearer through in one Part than another, we can accordingly bear more on the thickest Side, to bring it to an Equality; and the further we advance, the more this Care will be wanting, lest the Instrument, at the End of the Operation, should break through, and touch the *Dura Mater*, (which, if not contiguous, yet swells by the Pulsation of the Brain close to the inner Superficies of the Skull;) or else, least it break off some Particles that might prove equally offensive.

The Teeth of the Crown touching the Membrane, is indeed, in a great Measure, guarded against by the Diameter

* *Terebra vel Terebellum est similis communibus terebris fabri Lignarii. Modiolus vel Trepanum cavum est, t. res imis oris senarum denticulatum ve & terebræ rectæ quod versatili manubrio circumagatur.*

meter enlarging upwards; and the best Caution we can take against the latter, is to remove the Instrument frequently, to clean it, and the Skull from Dust with a little Feather-Brush, and to search the Depth of the Bore with a Probe, that so the Surgeon may cut equally, by being informed at what Point to press hardest.

Sometimes the Piece comes out entire; and sometimes the two Tables are divided. This the Operator will perceive, by the Instrument being a little bloody at touching the *Diploe*, and take away the first, when loose before he proceeds on the other: And both removed, the Perforation is to be smoothed with a *Lenticular*, slipping first an unctuous *Syndon*, (*i. e. a Bit of fine Linnen cut round, and rather larger than the Perforation,*) whose Edges may slide between the Skull and the Membrane, to catch the abraded Dust and Particles.

The Dressing to the Membrane (after the Operation is compleated) should be a *Syndon* dipped in the following Mixture made warm; and before introducing, should have a single Thread through the Middle, for the easier bringing it away. *The proper Dressing.*

R *Resin. Com. ʒss. Ol. Rosar. ʒij. M. Or, R Spt. Vin. vel. Tinct. Myrrh. Mell. Rosar. a. p. æ.*

The Perforation must be fitted with a Dossil of dry Lint, and the whole Interspace of the bared *Cranium* with others: To the wounded Scalp, some Pledgits of a Digestive; and over all, a good Compress, and the Head Bandage. *The Head-Bandage is a double Rowler, the Ends of unequal Length, and beginning on the Forehead, you carry it behind; with the shortest End you pass backwards and forwards, till the whole Head is covered; and the longest constantly going round, binds at every Turn. Over this may be a Woollen Cap.*

The Prosecution of this Cure, may require some Variation of Method; which I shall animadvert upon, in a Word or two, as it may respect the Membrane or the Bone.

From the Membrane (*crassa Meninx*) it must be noted, *How a* an Incarnation or Substance arises, that fills the Perforation, and does in Time harden to a *Callus*. *It begins to* *appear in about a Fortnight; and is at first nothing but a* *here,* *Callus is formed*

FRACTURES of the SKULL.

Transudation of Blood from the Capillaries dispersed through it, and may be furthered or hindered in too quick a Growth, partly as we dress with the first or last of those Receipts above. How this Transudation or Supply after trepanning comes from a particular Part of the Membrane, when the rest remains smooth, seems to be the wonted Compression of the Skull being taken off, whereby the Air-Globules circulating with the Blood, swell the Capillaries, and thrusts out their Contents here.

Query, Whether the Maturation from such Incarning, is not called by the Name of extravasated Blood corrupted? and whether, or no, the firm fastening of the Membrane to the Skull, by this intermedial Substance, does not give cause to Head-ach, and Complaint after healed?

*How an
Exfolia-
tion maybe
prevented.*

The Bone being long exposed in these Cures, does usually exfoliate; but if we would not be wanting in our Endeavours to prevent it, then we must rasp, and pierce the *Cranium* a Line or two, or to the *Diploe*, at several Places with the Pin of the Trepan; and so a bloody Matter will exsudate, that in a little Time will cover the Whole: Dressings assistant thereto, may be Pledgits of the following

*R Sp. Vin. in quo Pul. radic. Aristoloch. vel Irid. Infusus.
& Mell. Rosar. q. s.*

If an Exfoliation cannot be avoided, we may allow a Month or five Weeks to perfect: The thrusting it off then, is by a like fleshy Substance that arises underneath, and which duly increases till the whole Vacancy be filled, and make one uniform Figure with the rest of the *Clypeum*.

*How to
prevent a
Fungus
in the
Wound.*

When a new Flesh has spread the Membrane and Bone, the greatest Difficulty left to encounter, will be preventing its Fungosity, either in the Hollow, or the Lips of the Wound. The best Means for this, will be Evacuations, Dieting, and (externally) dry Dressings, filling the Space such a Height, as the Bandage may press and resist its Growth; or, if that avail not, *Escharoticks*.

Lastly, As the Wound is filling, we should begin timely with our Desiccants, and heal from the Edges; *U. Diapomphol. Tutia*, or, *Desiccat. Rub.* will do. And when the Cicatrix is compleat, it remains on us for some Time

Time to defend the Part against the Injuries of Cold, Blows and other Accidents.

Instances of Fractured Skulls.

EXAMPLE I. ABR. MASCOLL..

This, and the two next Observations, happen'd in that general Engagement our Fleet, under the Conduct and Command of that great Admiral Sir George Rooke, had with the *French* off *Malaga*, 1703. A Fight, that on our Side, appeared to me directed with consummate Wisdom and Courage. The Wound here was large, and laid open the Fracture to Sight on the Right Sagittal Bone : But the Patient appeared frightened and melancholly with the Blow, and would not, on any Representation of Danger, admit of the Operation, tearing off the Dressings which were made to his Wound for several Days together.

A fractured Skull cured without trepanning.

His Hands were tied, to prevent as much as possible, so delirious a Behaviour. He was blooded every Day for a Week, sometimes in the Jugular, and sometimes in the Arm, or Foot ; and had a Fontanel cut *inter Scapulas*.

Without any other Means, the Wound in a Month, was contracted to a small Compass, and the *Delirium* off : But as it became seemingly healed, the Matter increased upon us, and having a soft Tumour about it, gave Reason to suspect a Translation of Matter from within, and a Foreboding of very bad Consequences ; but it proved only precursory of an Exfoliation ; and, in two or three Days, having extracted all the loose Bone, the Matter lessened, &c.

While I knew him, he continued troubled with a Giddiness, Pain in his Head, and Epileptick Fits ; (the latter, perhaps, rather imputable to the Fright, than Fracture.)

EXAMPLE. II. JOHN USHER.

This Person was struck by a short Splitter of Wood, in the Forepart of the *Os Sincipitis* : No Symptoms of a Fracture followed, but to Appearance, as well as ever he had been in his Life.

We

FRACTURES of the SKULL.

We dilated the Wound, in order to extract this Splinter with a Forceps, or other Instrument; but finding our Endeavours in vain, and not being able to judge at what Depth it stuck, or the Accident that might ensue from leaving it any Time, we thought proper next Day to apply the Trepan, and found an odd Circumstance after the Operation; for the first Table being removed, the inner appeared depressed to a pretty large Circumference.

The Operation was repeated through both *Laminae*, and the deepest Part of the Depression, till the Splinter was brought away. We found no Extravasation; and dressed the Membrane Perforation, &c. in the Manner which has been already recited.

Fourteen or fifteen Days passed without any remarkable ill Symptom, and then the Patient was suddenly seized with a great Pain in his Head, soon followed with a Sopor, Stupidity, and Looseness: I blooded him, gave an easy Purge of *Pul. Rhabar.* kept him to the white Decoction, and some volatile Smells; but about the twentieth Day, he was farther seized with a Palsy of his Tongue, and left Arm, and died in twenty-four Hours after.

From the former Instance we see the Probability of Success without the Operation, though attended with Symptoms that are said to indicate it. And in this, how fallacious the Dependence on it is, though there seemed nothing wanting but a skilful Management and Direction of the Operation itself.

EXAMPLE III. JOHN BULL.

This was a large Fracture and Depression by a Splinter: The Wound was immediately stretched with a cross Incision, and next Day the Operation performed.

I passed the *Elevator* after finishing between the Membrane and Skull, attempting to raise the depressed Part; but as much in vain, as if it had been laid under a Corner of *St. Paul's*; nor is it reasonable to expect otherwise: For if a depressed Part has so firm a Contiguity, as to bear the Pressure of Trepanning, how absurd must it be, to think of raising it by so weak an Instrument.

Finding

FRACTURES of the SKULL.

91

Finding myself (not unexpectedly) disappointed, and that the Depression rested so close on the *Crassa Meninx*, that it was with some Violence the *Sindon* could be thrust between: I resolved to take away with the Trepan as much of the Depression, as seemed to threaten a dangerous Consequence, by compressing on that Membrane; and compleated it at three several Perforations more. On the *Dura Mater*, immediately under the Depression, were found some very small Globulations of Blood.

We gave the usual Dressings to the Membrane and Bone, and in a Fortnight, found these several Alterations, viz. those little Coagulations to maturate off, the *Dura Mater* to spread with a ruddy Substance, the exposed Part of the Skull to grow discoloured; and, after a longer Communication with the Air, and Medicine, came (to the best of my Remembrance) more flexible, and yielded the small remaining depressed Part to Elevation. Whence I would ask whether when Exfoliation is inevitable, it is not better to assist and forward the Mollification of the Bone, by unctuous Applications?

Our Business, in the Progress of the Cure, was to prevent too quick an Increase of Flesh, and to wait for the Exfoliation. The first we helped by dry Dressings and a Compression; the latter, Nature effected in about thirty Days, a new Incarnation from beneath thrusting it off, and gradually filling the Vacuity.

After Cure, he continued the Remainder of the Voyage subject to Pain and Vertigo.

EXAMPLE IV.

I was sent for to advise about a Lad that had fell from the Main-Yard of a Ship, and who was supposed to have fractured the Skull, he having vomited, bled at the Nose and Ears, and besides lay speechless and insensible. On the Forepart, near the *Frontal Suture*, was a small Wound, the only Hurt that could be perceived through the whole Scalp; which was laid open by a cross Incision a considerable Length, and the Patient prepared by Bleeding for the Operation.

Not discovering the Fracture, it was however omitted some Days, until a Continuance of the Symptoms made us apprehend the utmost Danger, and put us on the Per-

FRACTURES of the SKULL.

formance, to avoid Reflection, the constant Attendant of Miscarriage and Omission; but found the *Dura Mater* clear of any Extravasation.

Our Dressing was a Sindon out of *Sp. Vin.* and *Mell. Rosar.* a little Ball of the same to fill the Perforation; and all the rest of our Dressings Dossils of dry Lint, excepting only a large Pledgit spread with Liniment, for the easier bringing them off, Compress, and Bandage.

About a Week after, the Patient having been often observed to lift his Hand towards the hinder Part of his Head, we found there, on Search, a Tumor with Matter collected in it, as appeared on opening; and what was more surprizing, a Fracture that gaped wide enough to pass a Probe through, and stretching a great Length on the *Os Occipitis*: Here we apply'd the Traphine again, imagining with Reason, the Discharge was *ab intra*, and found some Maturation then, and more next Day. That the Membrane should be punctured, is, we are told, plausible and practicable, for the Relief of the Brain, which thus is in danger of Sphacelation; but whether in the present Case, it could turn to any better Advantage than the imperceptible Passage that Nature had already made, was a Question: Or whether this Matter might not be lodged there from the external Wound? We thought not; and omitted puncture, shaved the Head, blooded, and used spirituous Embrocations, and internally Cardiacks. He continued speechless and emaciating until the third Day after the last Operation, and died. On opening the Skull, the Fracture was found to be the whole Length of the Occipital Bone; and inside the Membranes abundance of foetid Matter.

EXAMPLE V.

A Concussion of the Brain. A young Lad standing in a Boat, under the Bow of a Ship, a great Dog accidentally fell from out of her, and brought his Head and the Boat's Thwart together. He bled at the Ears and Nose, and kept doing so by Intervals for twenty-four Hours; Speechless also, and insensible, yet no Wound or Appearance of Hurt through the whole Head.

I took away $\bar{3}xij.$ of Blood immediately, had the Head shaved, and rubbed his Temples and Nostrils with

FRACTURES of the SKULL.

93

with an equal Mixture of *Sp. Lavend.* and *Sp. Sal.*
Vol. Ol.

The next Day I blooded him again, applied a large Vesicatory to his Neck, and made a contempering Julap. But this he constantly regurgitated, as often as he attempted to swallow.

On the third Day, I repeated Venesection, injected a stimulating *Enema*, and towards Evening he spoke; which was the first Time from his receiving the Hurt.

We daily after this, found some Progression in the Recovery; but the Stupidity wearing off slowly, I cut him an Issue, and left him to the Use of Errhines, and have Reason to think they were of no small Benefit.

I could instance several others during my Service in the Navy, who, on Falls or Blows, have had all the Symptoms of fractured Skulls, *viz.* Vomiting, Bleeding at the Nose and Ears, clotted Blood from the Nostrils, &c. and yet have done well without the Operation; but all of them having bore some Similitude to one or other of the foregoing Examples, it would be Prolixity to relate.



V



V. Of LUXATIONS, or DISLOCATIONS.

To under-
stand Dis-
locations.



O understand Luxations, it is principally necessary to be instructed in the Articulation of the Bones, in what Manner they stand in respect to one another, that so we may not only know the Accidents we are called to readily, but the Remedies they are capable of. In the Limbs, whether perfectly, or imperfectly luxated; how, and to what Degree Extension is necessary; that we make it neither needlessly, nor violently; and in other Parts, the most conducive Methods of Recovery. Yet in none of these do I propose to say every Thing necessary: The Chapter is only Notes, and designed to imprint some better Knowledge on the Subject, than it is apprehended, any Thing written hitherto has done.

We must
know how
the Bones
are articu-
lated.

The Articulations are by *Synchondrosis*, or *Diarthrosis*, i. e. for an obscure or a manifest Motion; the former by intervening Cartilages (as the *Vertebrae*, *Costae*, and *Sternon*,) and those do very difficultly luxate, not only because close and numerous for necessary Stabiliment and Defence to the vital Parts, but also because the more obscure the Motion, the harder and drier those Ligaments, and Cartilages grow, which tie them together, rendering such Articulations stronger and more firm, than if made of one continued Bone.

Chiefly the
Joining
called Di-
arthrosis.
of two
Sorts.

The *Diarthrosis*, which chiefly concerns Luxations, is divided into *Arthrodia* and *Ginglymus*; the one for rotatory Motions of the Limbs, the other only Flexion and Extension: The former Sort, because the Motions are of great Compass, and equally to either Side, have a membranous Bag to link the Extremities for their truer play-
ing

ing in the Socket, and which supplies them with a Mucilage for facilitating it; and the latter have the Ligaments on the Sides, much stronger than before, or behind, that the Joints might not easily slip.

Instances of *Arthrodia*, are the *Os Femoris* and *Ischium*, *The first*, *Humerus* and *Scapula*; where the single round Head of *Arthrodia*. one Bone is received above into the Cavity of another.

The *Ginglymus* is of three Sorts: *First*, when the End *The second* of a Bone has two Protuberances, and one Cavity; and *Gingly-* that with which it is articulated below, has two Cavities, *mus*. and one Protuberance, to answer the Reception and Insertion of each other, as the *Humerus* and *Ulna*, *Os Femoris* and *Tibia*. A second and third Sort, (not so material to our present Purpose) are, of the *Ulna* and *Radius*, and the *Vertebræ* among one another.

Causes. The common Causes of Luxation, are Falls *Causes of* and Blows in the superior, and violent Extensions by *Luxations*. sudden Slips in the inferior Limbs; uncommon is an Elapse from some internal Cause, as when a Heap of Humours is thrown on the Joint, relaxing the Ligaments. I have seen the Appendix, or Epiphisis of the *Os Calcis* separated this Way.

Signs. The Signs are a Loss, or at least, very imperfect Motion of the Joint; a Cavity whence the Head of *Signs of* the Bone has receded, and consequently a Protuberance *Luxation*. where it is lodged. The Limb will appear shorter, or longer, and the Pain attending it, more, or less, according to what Bone is dislocated; and if it continue but some Hours unreduced, a Numbness; and if a long Time, an *Atrophia*.

Sign of Reduction must be the Reverse of these: The *Signs of* Limb will look, in all Respects, answering to its Fellow, *Reduction*. and Pain abated.

Children and Women, by their tender and lax Constitution, have them more easily restored than Men; young *Prognosis* Men than old; and in these again, better when recent, *sticks*. than of any Time standing; for in Age there is a natural Aridity and Stiffness in the Joints, increased by Delay in Reduction, which necessitates a more than ordinary Extension, and that distracts the Fibrils, constituting the Nerves and Tendons not easily recovered, but oftentimes ending in Weaknesses, sometimes in Palsy, and Emaciation. The same may be said of Frequency or Luxation

ation in any Joint, tho' the Person be robust and youthful.

Intentions of Cure, are *Reduction* and preventing *Accidents*. To the former belongs *Extension* and *Reposition*; to the latter, *Deligation* and *Collocation*. *Luxata ossa quatuor ad eam operationes sunt necessariae, Extensio. Repositio. Deligatio. Collocatio.* (Sennertus.)

Extension, how made. *Extension* is absolutely necessary for restoring any Joint displaced, the Muscles serving to the Motions of it, not only being useless for the Time, but painful: And this Extension we should take Care be not made by Jerks, but smooth and strong, in Proportion to the Depth of the Cavity the Head of the Bone has slipped into, which depends on the Make of the Muscles, and the Edge or Spine of the receiving Bone, whether superficial or deep.

What is previous to the Reposition. When you have the Limb at a proper Extension, and have afore considered which Way the Head of it has lapsed, whether *down, up, forward, or backward*, you are at that Instant to direct it the contrary Way, and it will fly in, facilitated by the Make of the Socket, which rounds inward (where the Joints have rotatory Motions) for the more close embracing the *Epiphysis*. If there appears any Difficulty in Reduction, either from the Time, (Hours or Days it has been out,) or the Depth it is to be extended from, it will be convenient before a Trial with Extension to use oily soft Embrocations about the Joint, to relax the Parts for an easier Submission.

Proper Bandage. *Deligation* and *Collocation* are to preserve the Joint restored, and prevent Accidents: The former can be explained only of Bandage, but is usually understood to comprehend the Applications, which should be of Medicines that can abate Pain, resist the Influx of Humours, and strengthen the Parts.

Such are Embrocations of *Ol. Rosar. Terebinth. a. p. æ.*

Ung. Dialthæ. Spt. Vini. Rect. a. p. æ.

Or, *Ol. Cham. Hyperic. Misce. q. v.*

And Emplaisters *e. Bolo. de Minio, ad Herniam*, or the *Cerat. commun.*

Rowling,

LUXATIONS.

97

Rowling will be different according to the Part to be rowled, and may be found adapted in M. *Le Clerc*. We may only observe in general, that a thick Compress of Linnen is to be under the Rowler, on that Side the Bone fell out, there being more Suspicion of its tending that Way again.

Collocation is to be a Position contriv'd to the Ease of that Joint, in particular, that has been dislocated, and therefore varies according to where the Case is. In the inferior Limbs, a little Elevation, and a confined quiet Posture for a Fortnight or three Weeks: And if the superior Limbs, they should be so slung and sustained, as that no succumbing Weight, of the Parts below, incommode it. In all, the Bandages and Covering should be soft and smooth, a proper Restraint in Diet prescribed, Venesection, sometimes Clysters and cooling Emulsions.

Bones joined for obscure Motion seldom luxate; but when they do, are most difficult of Recovery.

Bones as they are variously articulated, are more easy or difficult to put out, or return again.

The Rib joined by a double Tubercle to the *Vertebrae*, and their tranverse Processes; are by their Closeness, a Security to one another against Injuries, either to themselves or the vital Parts they defend. Yet sometimes are found by a particulatly circumstanced Blow or Fall, to be slipped. If *inwards*, there follows great Pain, Cough, and Difficulty of Breathing, to be remedied chiefly by internal Prescriptions.

If *outwards*, the Symptoms are not so violent; and is thrust to its place again by an Elevation of the Arm, and pressing at the Protuberance with the Fingers at the same time; but the retaining it there when replaced, will not be altogether so easy. The best Method that appears to me, is to keep your Hand upon the Defensative, (supposed to be apply'd,) until your Patient is laid in Bed: And then a Pillow should be placed in room of it, to compress smoothly; and leave him to that fixed and quiet Posture the Pain makes him embrace.

A Rowler here if tort, increases both Pain and Difficulty of Breathing; however useful a just Straitness is, in other luxated Joints, its not to be obtained here; slackening of Necessity, and not answering the End. So that upon the Whole, reducing a Rib is little more than For-

H

ma-

mality: Those that are whole will keep the broken one from receding much, rowled or not; and with a usual Defensative and quiet Position they unite.

The Rotula.

The *Rotula* also may start outward, and by keeping the Leg strait, be thrust into its Place again; but as the Muscles *Rectus*, *Vastus Externus* and *Internus*, and the *Crureus*, with the tendinous Expansion of other Muscles, fasten it to the Appendix of the *Os Femoris*; their Contraction will very much elude any Skill to keep it so.

The last I shall mention, of the Bones articulated for obscure Motion, are the *Vertebræ*, or *Ossa Spinae Dorsi*.

And the Spine.

What is meant by a Luxation of them, I do not well apprehend: A Fracture of the Processes may be by Shot or Blow, and recoverable; but a Luxation must be ever, I think, of fatal Consequence, as it is the Effect of the greatest Strains, and makes a Compression on the Spinal-Marrow, whence the Nerves serving to Sense and Motion arise.

The Make of the Spine.

To form the justest Notion we can of these Hurts, we should meditate on the Construction of the *Vertebræ*; they are short, plain on the upper and lower Sides, convex before, and the Processes, by which their Junction is made, are the hardest Parts of them; seven in Number, two lateral, one acute on the hind Part, and four oblique: Of these latter, the two ascending are received into small Dimples of the two descending Processes of each superior *Vertebræ* of the Neck and Back, and the Reverse in those of the Loins; so that the Articulation is a *Ginglymus*: Besides this, they are tied together by a strong Membrane forward, the whole Length of the Spine; behind, by the Tendons of the Muscles, and to one another by intervening Cartilages, but not distinct, which are thinnest backward, to yield to the Motions of the Body: These Processes together with the hinder or concave Part of the Body of the *Vertebræ*, form a Hole for the Descent of the Spinal-Marrow, lined with a Membrane.

At the Neck.

The two first of the Neck (*Atlas* and *Epistrophæus*) have this in particular, that the oblique Processes of the former receive the Tubercles of the Head, on which Articulation it moves backwards and forwards: The other

L U X A T I O N S.

99

other has a long Process, called *Dentata*, ascending between the two oblique, and is inserted into a *Sinus*, in the Forepart of the great Hole in the *Atlas*.

On this Tooth-like Process, the Head and *Atlas* turns half round; but is hindered from going farther by the Ligament that ties it to the Head, and another that fastens it to each Side of the *Sinus*.

Now if we consider the Closeness of the Bodies of the *Vertebrae*, with their intervening Tendons and Cartilages, they cannot any of them be easily distorted; but the Tendons may be stretched, and is what I imagine, is vulgarly called a *Broken Neck*; removed like the Cramp in a Limb, by pulling the Neck out strait. When there is truly a Luxation or Fracture of the *Process Dentata*, it must be mortal, though the Fracture not always immediately. I remember one *Sculthorp*, in her Majesty's Ship *Lion*, 1712, being very drunk, fell down the Fore-scuttle, and fractured (its probable) this Process, his Head fell like a dead Lump to either Side, and seemed so loose, that his Face might have been turned almost behind: I made due Extension, and fixed the Situation a little rais'd with Pillows: He continued speechless, insensible, and with some Difficulty of Breathing; but lived twelve Hours after.

The Signs of this Luxation are reckoned Distortion, Blackness of the Face, and Difficulty of Breath; to which will succeed a Palsy of the upper Limbs, Convulsions, and cold Sweats. The Extension for Redress is laying the Patient supine, and to fix your Feet at the Shoulders, and Hands below the Ears.

The *Vertebrae* of the Back have the least Motion, because their Cartilages are thin, their acute Processes long, and because the Ribs are fastened to them, except the two or three last. The Processes of these *Vertebrae* may be fractured by a Shot grazing, (as I observed before,) or other external Stroke, and yet be of no considerable Consequence. But a Luxation, considering their close Conjunction, and the Ribs being fixed to them, seems impossible; or if they could, such a Compression of the Spinal-Marrow must be attended with a fatal Resolution of the Nerves, and Death. I have heard indeed of a transverse Process being fractured in stepping over a Kennel with a Burthen, and think it probable;

*At the
Back.*

LUXATIONS.

because there are many Muscles arising, or inserting themselves into these Processes, that are the Strength of the Back; but if their Contraction can effect a Fracture, it will differ from the other Causes mentioned, and bring greater Lameness, because it must happen within-side their Insertion. I have seen also at our Theatre, a fractured *Vertebra* slid considerably over the next.

The common Hurt they are subject to, is the Distortion we call *Bunch-back'd*, and proceeds from particular Weakness in the Ligaments and Muscles; (natural, or made so by Blows or Falls) for if those behind through any Cause relax, as is too frequent in Infancy, from the Carelessness of Nurses in rowling and continuing a Child in one Posture, why then their Antagonists remain perpetually contracted; whereby the oblique Processes, which join the *Vertebrae*, part from one another, and the Space fills with a viscous Substance, not unlike what we call *Callus* in any other Bone: And if the Misfortune begins from the Birth, before Ossification, then the *Vertebrae* themselves participate and enlarge the Deformity. The Ends of the Ribs sometimes grow knotty in the Distemper, called the *Rickets*, and increase this *Bunching*.

And at the
Loins.

The *Vertebrae* of the Loins, by the Distance of the acute Processes, and Thickness of the Cartilages, bow most, and therefore most likely to recede at Manhood, by violent Strains in Labour or Exercise, and the two or three last of them the likeliest, because the Ribs are not fixed to their transverse Processes, and such are commonly call'd broken-backed, some of which we may have seen to go almost double, lame, and stiff for their Life-time.

This Misfortune, I do not apprehend proceeds from any Disconnection of the Bones; for then the Bent would be sudden, and immediate Death must ensue; but it is, as has been observed in Distortions of the Back, from the partial suffering of those Muscles that extend and erect the Body. The *Sacrolumbus*, *Longissimus Dorsi*, *Transversalis Dorsi*, *Inter-spinalis*, *Quadratus lumborum*, &c. These having their Tendons inserted into the transverse Processes, as heavy Burdens, or excessive Strains, shall weaken their Action, or possibly by Contraction, (for they are of prodigious Force,) fracture

I
more

T
ing u
of the

ture a Proceſs; why then the Muſcles that equilibrate theſe contract forcibly forward, and bow the Body much more than could be accompliſhed at the Back, not only on Account of their ſuperior Force and Strength, but becauſe the *Vertebræ* here have moſt Motion towards it, and no Ribs to ſuſtain againſt their yielding.

Theſe Hurts are accompanied with extraordinary Pain *Symptoms* and Inability of Motion, a Palſey or Numbneſs of the *accompa-* Arm, when it is the Back or Neck: The ſame in the *nying* inferior Limbs, when it is of the *Vertebræ* of the Loins, *them.* ſometimes alſo of the *Sphincter Ani*, a Suppreſſion of Urine, difficult Breathing, and the like.

External Applications are in common with thoſe of *Their* the Joints: An anodyne Embrocation, corroborative *general* Emplaſters, retained with Saff or Napkin round the *Remedy.* Body; and above all Things, Repoſe, to which a ſoft Bed will contribute; Venefection, proper Regimen, a quilted Pad to hide the Deformity; and, as the Party gains Strength, Steel Boddice. But becauſe theſe Hurts commonly affect one or other of the Bowels, it is uſual with them to preſcribe Vulneraries, the Simples of *Sperma Cæti*, *Lap. Hibern.* *Cereviſ. Pruffiæ*, Caudle, &c.

In ſpitting, or in piſſing of Blood.

℞ *Conſ. Roſar. Rub. ʒi. Coral. Rub. Gum. Arabic. a. ʒj. Miſc. Cydonior. q. ſ.*

Or, ℞ *Gum. Tragacanth. puriſs. ʒj. Solut. in Aq. Roſar. Rub. ℥j. F. Gelatina. M. cum Sacchar. Albiſs. ℥ſ. Nucis Moſchat. N^o. 1. & Capiat Cochlear. ſemis, 8a. quaque Hora.*

I proceed now to the Bones joined for manifeſt Motion, more ſubject to Luxation.

Os Maxillæ inferior.

THE Jaw-Bone hath two Proceſſes at each Angle; *The lower* the *Corona* ariſes broad, and ends in a Point, play- *Mandible,* ing under the *Proceſſus Zygomaticus*, where the Tendon *bow* of the *Crotaphite* Muſcle is inſerted into it. *joined.*

LUXATIONS.

The other called *Condylus*, (which makes the Joint,) is shorter, lower, and inserted into the *Sinus* of *Os Petrosus*; both *Sinus* and *Process* being cover'd with a Cartilage, and between them a third, to facilitate its side Motion in chewing. Another called *Ligamentum Annulare*, surrounds the Articulation, and the Muscles *Masseter*, *Temporal*, and *Pterygiodes*, help to keep it (by their Contraction) steady.

How commonly put out.

Any Thing that over-stretcheth the Mouth, whether yawning, gaping or chewing, may put the *Condylus* out of its Socket, into the Cavity of the Cheek. The Stress can very rarely bear upon both Sides at the same time. When it does, and the Luxation is perfect, several ingenious Surgeons have laid it down as mortal.

Signs, are the Jaw thrust forward, making the Teeth more prominent; a Distortion like *Spasmus Cynicus*, he can neither swallow, speak, chew, or shut his Chops.

For its *Reposition*, place the Patient steady, put your Thumbs close to the further *Molares*, press down on those Teeth, extending and raising at the same Time the Chin with your Fingers, without-side, and it may be heard to snap in. Those who do not care for Ceremony, use a Slap of the Chops, on the Side contrary to the Luxation,

Os Humeri.

The Shoulder how joined.

THE Shoulder is capable of all Motions; and that they might be easy and extensive for the Necessities of Labour and Exercise, the Head of the *Humerus* is larger than the Cavity of the *Scapula* wherein it is received, (which is likewise most of a ligamentous Substance;) to give less Hindrance to the Compass of them; but it is for these Reasons, also, more subject to Luxation than any other Joint, slight Accidents of Blows or Falls, frequently occasioning it.

Two Ways of Dislocation.

It is almost ever dislocated downwards, rarely forwards, very rarely backward, or upward; the two latter Ways, I believe, have been added rather from the Possibility of the Thing, than Experience and Fact; for it is not easy to convince what Sort of Violence it must be, which can effect them: The Breast takes up the Motion of the Arm, so effectually forwards, that how great or sudden soever the Blow is, the Joint will still yield, and cannot be stretched

stretched to a Luxation; and upwards, the Position of the Arm (very unusual in Falls) must be parallel with the Side; and the Blow take the Tip of the Elbow; and even then the Spine or Cervix of the *Scapula* must be fractured, to compleat a Luxation.

Signs of Luxation here, are a Cavity in the upper or back Part of the Joint, and the Head of the *Humerus* felt hard and protuberant in the *Axilla*, or forward under the pectoral Muscle; the Elbow (as is the Prolapse) hangs from the Side outward, or a little backward, not to be brought close without Pain, the Arm seems longer; and as the Motion of the Joint is lost, so it plainly follows, a Patient can reach no higher than that Extent which is between the Elbow and the Tips of the Fingers will allow, (*i. e.* only to the Mouth, if the Head be kept upright.)

How to know a Dislocation of it.

The Reverse of these will appear on *Reduction*; the Joint and Arm recovers a Similitude with the sound one, Pain is abated, and what we may add, as a surer Sign than all, is the snapping Noise that will be heard at its returning into the Socket.

Signs of Reduction.

Intentions of Cure are properly but two, as aforementioned. *Extension* and *Contra-Extension*, answers the first, (*i. e.* *Reduction*;) and *Deligation* and *Collocation* include the Means of our second, (*that is, preserving it so, and preventing Accidents.*)

Intentions of Cure.

For *Extension*, there are the Hands, the Heel, a Ladder, an Ambee, and Crutch in use.

When attempted by the Heel, the Posture is incommo-
dious for *Reduction*, because the Patient is laid on his Back; however, in order to it, a Compress or Linnen Ball must be fitted to the Hollow of the Arm Pit, for the easier fitting of a Girt, which is to come over that and the Shoulder, for *Contra-Extension*; while an Assistant below fixes his Hands on the Cubit, and his Heel in the *Axilla*; where, by the Way, it may be noted, that the Elbow-Joint interposing, abates the Force of *Extension*.

The next Method, is over another's Shoulder, or rather the round Step of a Ladder. Here the Compress and Ball being fitted to the *Axilla*, and a sufficient Strength placed before at the Arm, the Weight of the Body (tripped off the Step) is to be the *Contra-Extension*,

The Ladder.

LUXATIONS.

a more dangerous Expedient than any; for should the Weight, by such a sudden Jirk, bring but a small Part of the *Os Humeri* over the Step of the Ladder, there would be very great Hazard of fracturing it; at least, it is a Violence that will render more dangerous the attendant Symptoms.

The *Ambee* is an Instrument in common Use, and needs no Description, fixes under the Arm, the Length of it, and extends to what Degree you please.

The Crutch is the newest Invention; skrewws into the Floor, and in the Middle of the Head, a wooden Ball rises to thrust under the Arm, which fastened by proper Ligatures, there is a Jack and Pullies to make Extension by.

*The best
Way is by
the Hands
only.*

But the Hands, in my Opinion, are preferable to all these; and have been sufficient with me, for reducing a Shoulder, even when the Head of the Bone, has been prolapsed three Weeks. *Instrumentum Instrumentorum manus sit, & ipsa Ars Chirurgica ab ea nomen habet.* Instruments, I think, do not equally extend the Bone with the Muscles; they tear and distend their Fibres, when the Extension (where it ought to be) is what may be compassed with the Hands more commodiously, because you perceive the Head of the Bone moving, and can more seasonably help to raise it up.

The Method is to bring a Napkin round the Patient's Body, to sit broad on the Hurt-side, the upper Edge of it to come close to the *Axilla*, and on the opposite Part to be tied very fast, for some Assistant to make the *Contra-Extension* by. He that extends forward, should be strong, and have his Hands flowered, for the more firm holding.

If you doubt of Success in the first Tryal, (as may be in robust Men, or your Assistant cramp'd) have ready another; do not easily yeild to procrastinate.

The Patient is seated on a low Stool, fixed so that Assistants can come round, without incommoding each other; the Surgeon over looking, claps his Thumbs forcibly on the *Cervix* of the *Scapula*, and his Fingers underneath in the *Axilla*, without any Linnen or Compress between to dull the Sense of Feeling, when the Head of the prolapsed Bone is moving.

Thus

Thus ready, Extension and Contra-Extension should *Extension,* be begun together, not by Jirks, but smooth, steady and *and Con-* strong; and when the Head of the *Humerus* is found *tra Exten-* moving, the Surgeon must endeavour, with all the *sion.* Strength he has in his Fingers, to assist its Reposition, ordering him that extends, to favour this Part, by moving the Elbow downwards towards the Patient's Side, when he is at the full Stretch of it. We may note, that very strong Extension is chiefly of Use in robust Bodies, and where the Bone has been long slipped, least the *Cupula* Fracture; for in Children and young moist Habits, less will do; we need only make an ordinary Extension at the Arm, and bow contrary to the Way the Bone prolapsed, the Surgeon's Hands (at the same Time) grasping the whole Joint, will be a sufficient Contra-Extension.

Deligation and *Collocation* comprehend Dressing, Ban- *Deligation* dage, and Situation. The Dressing, where the Patient *and Collo-* is young, and of good Constitution, need only be a *cation.* Compress large enough to infold the Joint, dipped in *Oxycrate*, or *Acetum cum Albumine Ovorum*; and if older, or an ill *cacochymious* Habit to deal with, the following Embrocation and Emplaster will better resist Pain and Influx of Humours.

℞ *Ol. Lillior. Hyperic. a. p. æ. M.*

℞ *Emp. Diapalm. de Minio. a ʒ℥. Bol. Armen. ʒij.*
Oleum dulce q. s. F. Empl. extendatur super Alutam.

Or an *Empl. E. Bolo*, or the *Cerat. commun.* adding, if occasion, Venesection in the contrary Arm.

The Bandage, called *Spica*, described in *Mon. Le Clerc*, will be always best for the Shoulder; and next to that, the *Star*, (this makes only Crosses behind, the other before and behind;) either is usually dipped in *Oxycrate*, or Red Wine; and before using, the Hollow of both Arm-Pits, filled with Linnen Compresses, or Tow, to adapt the Bandage, and prevent galling, and keep the Circumrotations tort; because, what with the drying of the Rowlers, and Motion of the Breast in breathing, they soon slacken,

The

*A proper
Site.*

The Situation of the Limb should be in a large Napkin, thus: Bring one Edge of it close under the hurt Joint; carry one Part behind, the other forward, and tie fast on the opposite Side of the Neck; the inferior Selvedge of the Napkin bring up, having inclosed the Cubit, and pin at a suitable Elevation.

*A Slip of
the Tendon
imitates a
Dislocation.*

N. B. There is one of the Tendons of the *Biceps*, which passes through a little Notch, or Excavation of this superior Part of the *Humerus*, that sometimes in quick Jirks of the Arm, (Slinging, or Bat-playing,) slips its Place, and imitates in Pain and Imbecility a Dislocation: This is easily distinguished by the Protuberance and Cavity being wanted, and requires no Extension, only an easy Twisting, or Variety of Motion to the Arm, till it replaces.

The *Clavicle*, joined by *Syncondrosis* to the Process *Acromion*, is sometimes through great Violence displaced, with, or without the Dislocation of the *Os Humerus*.

Its starting is seen a little upward and forward, with Pain and Difficulty in moving the Arm. Easily returned, but requires Care, good Bandage, and a steady Position to retain; the unsuitableness of the Part to admit proper Rowling; and Contraction of the Pectoral Muscles are Impediments.

The Method of Reduction, is putting some convex Body between the Shoulders, (as your Knee) and pulling both back at the same time, you bring them to answer. A Defensive, a Compress, with Bandage as in the Shoulder; and pinning down the Arm from Motion, are the proper Means of Recovery.

If the Process *Acromion* should be broke at the same time, the Arm will become much impaired in its Motions upwards, because the *Musculus Deltoides* removes its Place.

Os Femoris.

*The Hip-
Joint
described.*

THIS Joint, made by the Insertion of the Head, or *Epiphysis* of the Thigh Bone into the *Acetabulum Coxendicis* is secured, besides the Depth of the *Enarthrosis*, by a ligamentous Substance round the Brim of the *Acetabulum*, that makes the Diameter less there, than in the Socket, binding in the Head of the Bone; which, if we consider,

consider, together with that Security the *Ligamentum teres longum* and the Muscles add, it will be almost impossible to allow its Dislocation in Adults, but that the Accidents taken for it are generally Fractures; a Mistake I have more than once seen. And is confirmed by what we may remark of this Accident in Adults; which we see often followed with continual Lameness, the Effect of a Fracture near the Joint; because on Enquiry, I have found they have been confined to the Bed a long Time, unable to stir the Joint of the Knee; whereas, were it a Dislocation only, it might be moved; a material Circumstance to distinguish them.

Where Children are weak and ricketty, and the *Epi-physis* as not yet united, it may be subject to an inward, outward, forward, or backward, either Distortion, or Dislocation, evident in some short Limbs that have gone the whole Life-time unreduced. And there are not wanting Authorities to assure the same in grown People, from the common Accident of Falls, and either of the Four Ways. To me, *the Possibility* seems only inwards, and that *first*, because the *Ligamentum teres*, which ties in the Head of the Bone, arises not from the Middle of the Bottom of the Socket, nor is inserted exactly in the Middle of the Head of the Thigh Bone, but on the Side next the Groin, most favourable for admitting it. *Secondly*, The *Ligamentum longum*, arising from the Neck of the Bone, and being inserted in the nearest Process of the *Coxendix*, suffers not the Stretch this Way. *Thirdly*, The Ligamentous Substance above mentioned is not so deep inward, as at any other Part of the Brim. And, *Lastly*, The Perforation of the *Os Pubis* is convenient for the Reception of the Head of the Thigh Bone: Yet all these concurring with any Violence, the Bone sooner fractures than dislocates; for as it must be perfect, (or the Head of the Bone would return back again presently) so that cannot well be, without a Rupture of the *Ligamentum teres*, an Accident scarce allowable; but if it can happen, exposes to every sort of Luxation, as well as the inward.

Signs of an inward Luxation, are a Tumor and Protuberance on the Hole of the *Os Pubis*, and Cavity on the opposite Side; the Leg appears longer than the other, the Knee and Foot turned outward, and the Motions

The Thigh Bone slips only inwards, unless by Congestion.

Signs of a Luxation at the Hip.

the

LUXATIONS.

the Joint serves to, is very imperfect, or lost. In the exterior Prolapse, the Leg appears shorter, the Leg and Foot turn'd inward, and the Heel to the Outside, requiring a stronger Extension to reduce, as being from a deeper Cavity, and unbending the Contraction of some of the strongest Muscles of the Body.

Prognosticks.

As the Violence which luxates the Hip, must prodigiously exceed that of any other, and that the *Ligamentum teres* is broke, so the Pain and Influx of Humours will be proportionably aggested; and Inflammation, Apostematation, and perpetual Lameness, a more common Consequence of it. The Humours falling here, on such great Contusions, has at Length been found to foul the Edges of all these Bones.

How reduced.

In the inward Luxation, the Muscles are already on the Stretch, and therefore require no great Extension; there seems only to be wanting some strong Person, between whose Legs the Patient may sit, and with a strong Grasp about his Body, hinder his receding or giving way, which is the Contra-Extension; or with a strong Towel up the Twist, let two Assistants do it, while the Surgeon with both Hands above the Knee, extends forward, (an Assistant bearing the Foot up,) and at the same Time carries it towards the sound Thigh, and upwards.—For reducing the outward Luxation, more is wanting: A Pin should be fixed, says Mr. *Wiseman*, on a Table, to come down between the Thighs, the Patient on his Belly; a Strap is to pass up the Crutch, with a Compress under, to defend from any Uneasiness; and forward (if the Hands are not sufficient) we may extend also with Straps, or use the Tackle and Pullies, thrusting the Thigh backward and outward at the same Time.

The Dressing, and Situation.

After Reduction, remains Dressing and Situation; and herein I should think a Compress dipped in *Oxycrate*, or Red Wine, large enough to infold the whole Joint, and crossing upon the Hip, would be better than Emplaisters, which obstruct the Perspiration of the Part, and by that Means raise a Ferment in the Humours, more rationally supposed to be aggregated, where the Hurt and Extension to restore it have been both so very great. The Rowler should be long and double, and like the Compress, cross over the affected Hip, and so continue with Crosses and Edgings till finished.

A proper Situation is resting the Hip on a soft Pillow, with the Knee and Foot a little raised, and continued for three Weeks in the quietest and easiest Position. Venesection, Clysters, and Dieting, are to contribute likewise their Share in preventing Fever, and other Disturbances.

Mr. Turner mentions two or three Cases wherein he succeeded without the Help of any Instrument: *The Osifiers flapped in very loudly; was perfectly easy, and got up at a Fortnight's End; in five Weeks could vault nimbly; nor ever after complained of any Weakness in the Joint.*

Os Cubiti.

THIS Juncture is a *Ginglymus*. The *Humerus* ends *Luxation* with a double Protuberance, which necessarily *of the* makes a Channel between them; on each Side of which, *Elbow.* there is also a little semicircular Rising. On the Foreside of these Protuberances, there is a small, and on the Backside a large *Sinus*. The *Ulna*, which is the Inside Bone, and makes the Joint, has a Cavity suitable to the inner Protuberance of the lower End of the *Humerus*; and it has two Processes likewise shooting from this Cavity, one before, and one behind: The foremost is small and short, running into the *Sinus*, on the Foreside of the Protuberances of the *Humerus* on Flexion; and the hindmost called *Olecranon*, (bigger and longer than the former,) runs into the hind *Sinus* on Extension, staying the Arm at a strait Line. The *Radius* has here a broad Head, Part of whose Circumference is receiv'd into a small lateral *Sinus* of the *Ulna*, bound in by a broad Ligament; (and by Virtue of this, the Actions of Pronation and Supination are performed.) The Top of this broad Head has an Excavation for receiving the outer Protuberance of the *Humerus*, and secured to it by the circular Ligament involving the Joint, and by several Muscles.

It is very difficult to conceive how a perfect Luxation *Semilux-* of this Joint can happen, semiluxated, or distorted: It *ation.* may be four Ways; inward, outward, and sideways; though if we consider how it is secured from the latter by the Make, and strong Ligaments on its Sides, and how improbable it is for any Flexion to thrust it out backward, we may be apt to imagine it is more frequently, than truly represented so, to increase the Timidity of a Patient,

Patient, and recommend the Skill of the Artift. The sharp Pains that enfue after Blows on the Tip of the Elbow, where the Extensors of the Wrist arife; are often taken for a Luxation.

The most likely Way of Luxation, is inwards; and yet high Falls, wherein the Fore-Arm catches or strikes on any hard Body, rather makes a Fracture, than any Distortion at the Joint, unless, in such Falls, the Person endeavours to save himself with the Palm of his Hand; for then the Strain lies entirely at the Elbow, (the Wrist yielding, and the Pressure along the Cubit being *secundum Longitudinem*;) so that if of Necessity something must give way, it will probably be here; but then it cannot recede far without fracturing the *Olecranon*, (the posterior Process of the *Ulna*;) a deplorable Case, and must produce incurable Lameness the very Time it takes up in Recovery, rendering the Joint stiff and immoveable. I have known the Elbow kept so long at the Breast for a Compound Fracture above, that it could never be stretched out again. But when such an Accident is apprehended, the Curve is more commodious to an Invalid, than the strait Line.

Signs.

Signs of a distorted Elbow, are a Protuberance on which Side soever the Head of the Bone thrusts out, a Cavity whence it has receded, and an uncommon Pain from a Distraction of the Tendons, the Flexors, and Extensors of the Hands and Fingers taking their Origin from the inner and outer Protuberance of the lower End of the *Os Humeri*.

Reduction.

To reduce, is to extend and force the Head of the Bone contrary to the Way it prolapsed.

The Dressing and Position should be contrived emollient and anodyne. Embrocate with *Ol. Hyper. Rosar. a. p. æ.* and dip a double Flannel (snipped from each End toward the Middle) into the same Mixture warm, and apply: It is, I conceive, better than a Plaister, as being more soft and *anodyne*, and compliable to the Shape and Position we are to put it in. The Rowler should be single: Begin, with one Turn on the lower End of the *Os Humeri*, slope it down on the Bending of the Arm, and make a Turn on the upper End of the Cubit, re-ascending on the Bending of the Arm, so as to make a Cross there; continue so to do with Edgings, till the Whole

LUXATIONS.

III

be covered, (except the Tip of the Elbow) and finish at the upper Part of the Arm. You must give the Cubit a little Flexure before Rowling; and the Elbow not being covered, will yield enough to sling at a proper Elevation.

Os Tibiæ.

THIS Joint is a *Ginglymus* also, (the strongest of *Luxation* Articulations. The lower End of the *Os Femoris* of the *Knee*. has a double Protuberance, divided by a Cavity, and the *Tibia*, or *Focile majus* (on which the Juncture is made) has a double *Sinus* at its upper End, with a Production between for the mutual Reception and Insertion of one another. The *Cartilago lunata* runs between the Extremities of the two Bones, and facilitates a Side Motion. The *Fibula* receives at this End the external Knob of the *Tibia*, but comes not up to the Knee, to make any Part of the Joint.

The *Patella* tied down on its Forepart by Muscles *Patella*, passing to, and beyond it, and by the Tendons of the Extensors of the Leg, add a great Strength to the Joint, *a great Strength particularly on going any Descents; and behind the Ham-* *to the Joint.* strings, (*Tendons of the Flexors*.) All which together, renders it (unless where great Enervations and Discontraction of the Tendons has preceded) difficult of Semi-Luxation sideways or backwards; but forwards, seems impossible, not only on account of the Pan, but because *Genuflexion* can never be carried far enough.

Signs, are what have been remarked in common with *Signs of* others, unless that the Tumor and Cavity may be more *Sublux-* apparent: And Reduction is extending and moving the *ation and* Head of the Bone, contrary to the Way it went out. *Reduction.* Suppose it were backwards, you are to have an Assistant for the *Contra-Extension* above the Knee, and yourself with one Hand on the Calf, and the other above the Ankle, are to extend forwards, giving it at the same Time, a quick Flexion towards the Buttock, and it will knap in: A certain concomitant Sign will also be the Cavity that was under the Pan, being filled up again. The Dressing should be an Embrocation of *Ol. Rosar. Hyper.* *M.* a corroborative Emplaster on Kid Leather, a Compress in the Ham, a Flannel over that, and then a double Rowler. Begin with the Rowler just above the Knee, descend

descend with a Cross under the Ham, bring them up below the *Rotula*, and make a Cross on the Leg. Continue thus to do with Edgings, till the Knee is covered, and Rowler finished. The Compress included here, not only guards against the Tendency of a Prolapse, but defends the Tendons behind from Cold and Uneasiness, which too aptly contract them in these, as also in Fractures, that necessitate a long and inactive Confinement. When such Contraction does happen, I must recommend, besides warm emollient Embrocations and Fomenting, a Working of the Limb backwards and forwards on the Joint: These Chords have some Resemblance to those without us, and soften, and unbend with Warmth, Moisture and Motion. I knew such a Contraction of the Flexors, after a long Confinement for a Fracture of the Leg, that when Ointments and Fomentations had been used to no Purpose, unbended and straitened after about a quarter of an Hour's such Exercise with the Limb.

Ossa Carpi.

*The Wrist
described.*

THE *Radius* (on which the Articulation of the Wrist is made) is largest at the lower End, and has two *Sinus's* for receiving the first Rank of the Bones of the Wrist, and as only three of this uppermost Order make the *Diarthrosis*, the fourth laying irregularly, seems easiest of receding from its Station. The second Rank lay even, answering to those of the *Metacarpus*, which at this End have each a *Sinus* to receive them. The *Ulna* is small here, received into a like *Sinus* of the *Radius*, and makes also a short Process even with the Outside of the Little-Finger. This Process gives Rise to Ligaments that tie it to the Bones of the Wrist, and serves to keep them in their Place. Lastly, they are strongly tied to one another by Ligaments from the *Radius*, and by the annulary one.

From this Description of the Wrist may be inferr'd, *First*, That being composed of several single Bones, they may recede from one another; and that chiefly at joining the two Ranks, or in that fourth Bone of the first Rank, not seemingly so well secured as its Fellows. *Secondly*, The first Rank may slip, or distort from the
Radius,

Radius, or the second Rank out of the *Sinus's* of the *Metacarpus*, either according to the partial Weakness, and as the Strain or Pressure bears on a particular Point, or the whole Joint. *Thirdly*, From the Manner of their joining, and the Motions of the Wrist, we may conclude, any other Way of Dislocation, than forward or backward improbable, excepting that fourth Bone of the first Rank, which I have seen continue prominent nigh the Process of the *Ulna* with little Trouble.

As the Signs of Distortion are a Prominency one Way, and a proportionable Vacuity on the other, so consequently Reduction is the Recovery of its Shape; and though done easily by Extensions (their Edges holding still a Part with their Fellows,) yet is it subject in its Consequence to great Pain and Tumor.

Pain is a necessary Result from the greater Sensibility of a Number of Tendons here; but then the Tumor is rather an Inflation. Now according to the Mechanical Method of accounting for the Operation of Muscles, Inflation should be in the Bodies of them, and none in the Tendons; yet so it comes to pass, that fleshy muscular Joints have most Danger of inflaming and apostemating from an Accumulation of Blood; and tendinous Joints, such as the Wrist, more evidently to a Rarefaction of Blood and Spirits; such are these large soft inflated Tumors, the constant Attendant of Sprains and Distortions.

The Doctrine I would draw from this, is only in respect to Rowling. That in fleshy Articulations, the Tumor, when inflamed, being plainly an Accumulation of Blood, and no supposed Expansion or Elasticity of Air, strict Bandage must obstruct the Circulation, and increase the Accident. On the contrary, in inflated Tumors (as all these may be reckon'd, which carry the natural Colour of the Cuticle in Sprains) straight Bandage is most advantageously used. We need not neglect Topicks afore-prescribed; but the Cold Bath, Rest, and this, are the most effectual Means of Recovery.

Ossa Malleoli.

*The Make
of the
Ankle
Joint.*

THE Ankle Joint is made between the two *Focils* and the first Bone of the *Tarsus* (called *Astragalus*) by a *Ginglymus*; for the *Tibia* at this End has a Cavity divided by a small Protuberance, and the convex Head of the *Astragalus* (inserted into this Cavity) is divided by a *Sinus*, for the Reception of that Protuberance; so that the *Fibula* makes only a Part of the Joint, as it descends in a large Process on the Outside of the *Astragalus*, forming the outward, as the Process of the *Tibia* does the inward Ankle.

There are six Bones more go to constitute the *Tarsus*: The *Os Calcis* is the largest, tied by a *Ginglymus* to the Underside of the *Os Astragali*, or *Tali*, which on the hinder Part of its Underside has a *Sinus*, and on the Forepart of the same Underside a Protuberance for receiving, and being received by an answerable Convexity and *Sinus*, in the upper Part of the *Os Calcis*; and from this Juncture is formed a Cavity, containing an Oily Substance for lubricating the Joint. In the hinder Protuberance of it, is inserted the *Tendo Achilleis*, and before it has a Cavity, receiving Part of the *Os Cubiforme*.

The *Os Naviculare* is situated before the *Os Tali*, receiving its convex Head; and forward it is divided into three Heads itself, and inserted into the *Sinus's* of the *Ossa Cuneiformia*, or Wedge-like Bones: These again, are joined to the three inner Bones of the *Metatarsus*: They are in Rank, and the *Os Cubiforme* with them; the latter joined in like manner to the two outer Bones of the *Metatarsus* before, and the *Os Calcis* behind.

The Conformation of this Joint considered, how fast bound with Membranes, Ligaments, and Tendons, makes it very difficult of Luxation; such a one, particularly, as that any two Bones will ride on one another. If the *Os Tali* were entirely to slip out of the Cavity of the *Tibia*, how miserable must be the Distortion, and how torn the Ligaments? Nor could it well be, without displacing or disturbing at least its Juncture with the *Os Calcis*, or *Naviculare*; and that perhaps, might extend further to the Bones they are contiguous to.

Again,

L U X A T I O N S.

115

Again, the *Os Calcis*, *Naviculare*, and *Ossa Cuneiformia*, seem not capable of being disjoined at one End, without making a Separation at the same Time from the Bone they are contiguous with, at the other: As for Instance, should the *Os Calcis* depart from the *Astragalus*, it must move from the *Cubiforme*. If the *Naviculare* recede from the *Astragalus*, there must likewise be some Recession at its Junction with the *Cuneiformia*. And they again, by any Accident, suffering a Distortion from the *Naviculare*, must, in some Measure, bear the Effect to the Bones of the *Metatarsus*, to which they are joined; and this because they are short, and so closely linked and united. Whence the Ankle, as it approaches towards a perfect Luxation, suffers insupportable Pain, a long and tedious Weakness, and sometimes irrecoverable Lameness.

That the Dislocation is imperfect here, may be imagined from the slight Accidents commonly said to induce it, such as slipping on an uneven Surface, sudden Stumbles and Falls; and this Recession of the *Os Tali* from the *Focils*, or the *Os Calcis* from that (both *Ginglymoid* Junc- tures) may be four Ways; *Outward*, *Inward*, *Backward*, and *Forward*.

Signs: To judge of it, we must attend to the Nature of the Hurt, how received, &c. The Pain, Tumor, and Deformity of the Joint: If inward, the Foot will be found turned outward, in Proportion to the Distortion; and if outward, the Foot turned inward, &c. But as these Signs are equally the Concomitants of Sprains, and that it is not easy to perceive any small Distortion of the Bone through a large Tumor, or a peculiar Conformity; I say, in regard to this, it is not impolitick to recommend Extension at all Times: A Patient confines himself with more Satisfaction; and keeps him off from Pretenders, who never fail on such Omission, to represent the Case in bad Colours, the better to recommend themselves.

Extension should be made with one Hand on the *Me- Extensioes*
tacarpus, the other under the Heel, while an Assistant *how done,*
holds the Leg the same Time: Having collected from the
aforegoing Signs, how the Head of the *Astragalus* lies
distorted, wring the Foot the contrary Way; or when
the Recession is small, or but suspected, press gently
I 2 with

Again,

with your Fingers about the Joint, (when at its Extension,) to restore the Deformity.

The Cure.

The Cure consists in the present, and continued Use of the Cold Bath, an Embrocation of *Ol. Rosar. Hiper. p. æ.* a Corroborative *Empl. ex Minio & Diapalm.* a Rowler, and, what is the properest Ingredient towards Amendment, resting on a soft Pillow. As it recovers, recommend a sort of half Boot, coming up as a Part of the Shoe to lace on, and steady the Joint.

Os Pollicis & Ossa Digitorum.

*The Thumb
and Finger
Joints
described.*

THE Thumb is joined to the Wrist, as the Bones of the *Metacarpus* are; all which have a *Sinus* at their upper End, for the Reception of the Wrist Bones. And the second Bone of the Thumb is joined to the first, as the first or longest Phalanx of the Finger is to the Bone of the *Metacarpus*, i. e. the upper End has a *Sinus* for the Reception of the round Extremity of the other; therefore may be dislocated, at least, distorted any way, backward, forward, or sideways, and have these Signs.

Forward the Flexors will be stretched, backward the Extensors, and the Disparity is easily seen and felt.

Extension reduces them; and they require (as greater Dislocations do) an Embrocation and Emplaster, suitable Rowling and Repose.

The receding of the Bones of the *Cranium* and *Sternum*, with the Rupture of the *Ileon*, have by some been brought under the Head of Dislocation.

Sprains.

*Sprains
have a
Similitude
with Dis-
location.*

IN Luxations the Joints are always sprained, whence the Symptoms of Pain, Tumor, &c. and oftentimes without it.

According to the Violence of the Fall or Hurt, that occasioned the Sprain, the Tendons become more or less distended, and that latitudinally or longitudinally; which, allowing for the Age of the Patient, is the only Cause why the Weakness or Lameness of that Joint, should be of a short, or a long Continuance; because, as Nature has given to all Parts of the Body a Peculiarity of Sense, Texture.

Texture, and Figure, which will best conduce to the Use or Action it's designed for; and again, that the Parts are more or less solid, as may answer best those Ends and Necessities; so it necessarily comes to pass, that the more sensible any Part is, on which a Hurt happens, the more acute and sharp must be the Pain; and the more solid it is, the longer Time it must take for Restitution. The Tendons are Parts of the acutest Sense, and of a mean Solidity, having a peculiar Texture on which the Perfection of Action depends: If they grow dry, and approach towards Rigidity, by Defect of Nourishment and Infirmities of Age, we find they proportionably lose of their Sense, and the Limb or Limbs become imperfect and maimed in their Motions: So on the other Side, if Strains distend them from their natural Make and Manner of Compaction, the Vacuolæ fill with nervous Juice, and they will, as I observed before, on account of their Solidity, require a longer Time of Recovery; which would not sometimes be protracted for so many Months, (often a longer Time than a fractured Bone is uniting,) if the Quickness of their Sense did not stimulate an Afflux of the nervous Juice and Humours to the Part which promotes those additional Accidents that obstruct it; nor are they at any Time irrecoverable, but from a Detention and Fixing of such Matter as should have been excern'd, (if possible) and by continuing, impedes the Access of Spirits, dulls the Sense, and consequently spoils the Use of the Part.

If a Strain be therefore as thus described, why then, at its first being received, we should endeavour to restore the Nerves and Tendons to a due Tensity again; and this, in my Opinion, can by nothing be more effectually done, than by the immediate Use of the Cold Bath, a Means that will restore them to their proper Springiness and Stiffness, (if continued,) and recover Strength sooner than all other, in a much longer Time, could do.

Corroboratives, whether distinguished by Emplaisters, Rowling, or Bracing, may bring up the Rear and have their Use.



VI. Of AMPUTATIONS and WOUNDS.

*What is
first to be
considered
in Ampu-
tations.*

IN this Operation, the first Thing we ought to have in Intention, is the stopping of the Blood, that so when Excision is made of a Limb, we may not be at a Loss for the *Apparatus*, nor a Presence of Mind to apply it: Too copious a Flux may not only be of immediate Hazard, but by dispiriting a Patient, and abating of those Supplies every Part should receive, subject the Stump hereafter to the worst of Symptoms, *viz.* Pain, Indigestion, and Mortification.

It is therefore a necessary Interruption to adjust now the properest and safest Way of stopping the *Hæmorrhage*; that at the Operation we may not seem plunged into Difficulties; a Thing terrifying to a Patient, and a great Hindrance to the Success of it.

*Methods
of stopping
a Hæ-
morrhage.*

*First is by
Astrin-
gents.*

There are three Methods in Practice: The *first* is by Medicines Astringent or Styptick.

The *second* by Cauteries, actual or potential.

And the *third*, by a Deligation of the Artery.

First, *Astringents*. In this Class we may reckon all Earths, *Terra Sigillat. Lemnia, Pul. Astringens, Bolus Vera, Sang. Dracon. Flor. Balaust.* all Vinegars and rough Wines, and to speak generally, all such Things as are dry, and have an Asperity of Taste: Also Medicines of a gummy, sticky, or glutinous Nature, such as Whites of Eggs, *Hare's Hair, Aloes, Thus, Myrrh. Terebinth.* of all kinds. The Manner of using the Powders, is mixing them to a Consistence with Oxycrate and Whites of Eggs, and then spreading them thick on Pledgets of Tow.

Astrin-

Astringents when they are most successfully used, are *How they* not from any irresistible Stop their Stipticity can make *act.* to the rapid Current of the Blood through the Arteries, which is Absurd, but from the Circumstances of their Application; for when thick Pledgets are used, one compressing another, cross Cloths and Rowlers, on them again, straightly bound on, the Stump must needs be as secure from a Flux, as if a strong Compression were made with the Thumb immediately on the Vessel itself.

Ol. Terebinth. is of general Estimation among Astringents; Mr. Young celebrates it extraordinarily from several Experiments. *First*, Spreading it hot on a plain Board, it quickly became dry, with a firm gummy Integument. Painters mixing it with their Colours and Varnish, find the same Effect. *Second*, Dipping his Finger in reeking Blood, and then into hot *Ol. Terob.* it begat a sensible Straitness. *Third*, A Drop or two on Glass, or polish'd Marble, manifestly shrunk in their Expansion when dry. *Fourth*, Heat 3j. and bleed a Vein into it, you shall find it instantly coagulate, not a curdling like Acids, but a gummy Condensation; concluding it from thence to be an incomparable Medicine for Hæmorrhages, External or Internal. In the present Case, he explains its Operation in these Words *; "That it restrains an Hæmorrhage by contracting the Orifice, and begetting a firm Coagulation of the Blood; which Coagulum, he thinks, probable, heals the Orifice of the bleeding Vessel, either by uniting its Coat, *per Symptisin*, or by Concarnation, *i. e.* begetting some intermediate Substance; which it will nimbly do, being reckoned the best Application for curing Wounds by the first Intention."

And I must confess it an excellent Medicine in Ampu- *The* tations, not only in its constringing, as effectually as *Author's* any other of the Class, but principally from the ad- *Opinion.* mirable Property it has of restraining that frequent and trouble-

* Young's *Currus Triumphalis à Terebintho.* p. 46, 47

troublesome Attendant a *Synovia**. The Juices effusing and maturing on the Stump, being, by a skilful Management thereof, justly proportioned (through the whole Cure) from the Extremes of Indigestion and Putrefaction.

But whoever hopes more from this, or any other Astringents, that is, shall expect their bare Application sufficient to resist so impetuous a Motion as the Blood flows with, through the crural or axillary Artery, builds on a very sandy Foundation, and will on Tryal find himself deceived.

Inconveniencies of Astringents used alone.

Besides, Astringents used alone have these further Inconveniencies.

The first and greatest is, our being necessitated to make a very strict Bandage, and that especially with such whose Crasis of Blood is hot, thin, and serous; the Consequence of which is, present excessive Pain, and often in the Sequel, Mortification.

A second is, that there being confessedly only a *Coagulum*, on the Orifice of the Vessel, by Astringents, it is very much to be feared the first Dressings (clogged and cemented by Heat and the extravasated Blood) cannot be removed without occasioning a fresh Flux; or should that be avoided by a cautious handling and undressing the Stump, yet there still remains Danger from the Pulsation of the Artery, the Obstacle it has to break through being weak, when the other Fences of Rowlers and Compresses are removed.

And therefore, thirdly, for Security, we are obliged to make a cross Stitch, to let the first Dressing abide longer on, and perhaps to fasten on the Turniket at undressing; all which contributes to give unnecessary and greater Pain, to diminish the natural Heat of the Part, and to occasion Faintness and Indigestion.

A second Method is Caution.

Secondly, by *Cauteries*, *potential* or *actual*. These secure from bleeding by the *Eschar*, they make on the Orifices of the Vessels.

The

* A Word invented by Paracelsus, to signify that particular white glewy Matter about the Joints, Tendons, and Ligaments; a Lachrymation of the Lymphatick Vessels and Nerves.

The

The *potential Cauteries* are less eligible, as their Effects *Potential* are more tragical; they gnaw and corrode on the Ends of *Cauteries*. the Nerves and Tendons, and so insinuate and spread their Malignity, that you never fail of extreme Pain from them, a large *Synovia*, and too often Fevers, Convulsions and Death, as may be easily concluded from the Tribe of them. *Aq. Fortis. Ol. Vitriol. Mer. Sublimat. corrosiv. Arsenic. Chalcanth. Vitriol. r. &c.*

It ever you should be engaged to their Use, the *Pul. Vitriol. Roman.* is the readiest and best: A thick Pledget or Button is first to be pressed out of warm *Ol. Terebinth.* and when sprinkled or dipped in this Powder, applied to the Mouth of the Artery.

The *actual Cautery* has heretofore been of common Use *The actual* in these Operations: *Fabric. ab Aquapend.* says, The *Cautery*. antient Way was making Circumcision on the dead Part, within a Finger's Breadth of the live, with Cautery burning up all the remaining Mortification; others used a hot Knife: But modern Practice explodes it, for a Deligation of the Vessels which carries less Terror and Anguish. Mr. *Wiseman*, the Oracle of *English Surgery*, preferred this Method, not only here, but in common Wounds of the Veins and Arteries, p. 409. giving these Reasons, that it *secures the bleeding Arteries in a Moment, fortifies the Part against future Putrefactions, and the Stump requires Bandage less strict.* Mr. *Young*, formerly an eminent Practitioner at *Plymouth*, tells us in his *Currus Triumphalis*, p. 68. that he used to touch the whole Stump with a Cauterizing Iron, and chose according to the old Method, of Amputating in the mortify'd Part. Mr. *Turner* recommends Cauterizing here, and in all Hæmorrhages, (p. 212. 344, 526. 537. 540. Vol. I.)

Tutius enim est ignito ferro constringere. Botallus.

Si sanguis nimis profluat sistendus vel Escharoticis vel ignitis ferramentis vasis tantum ad motis quod tutissimum est. Ignis enim non solum fluentem sanguinem sistit, verum etiam reliquias Putredinis absumit.——— etsi vero Amb. Paræus (Lib. II. C. 20.) sine unctione nova quadam vasa deligandi ratione sanguinem sistere jubeat. *Tamen longe majus Periculum & dolores ex illa Deligatione, ad quam & acum adhibet, excitantur quam ex unctione.* Ac facile fieri,

fieri, potest, ut nervo aliquo puncto. Inflammatio & Convulsio cum vitæ periculo excitetur. (Sennertus de modo Amputationis, p. 585.) And really without any excuse for Hurry and Confusion in Engagements, it claims a Preference on many Respects, both of Astringents and Deligation; there is very little, if any more Pain, than Deligation or potential Cautery; and much sooner goes off than them, consequently a better guard against Fever, &c. Secondly, though applied to the Orifice of one Vessel, it influences those of the whole Stump, not only violently contracting the Coats of the Artery touched, but the Membranes nigh contract, so that the Vessels passing through them, have their Diameters lessened, if not closed.

And this cannot be said to be done in Deligation, since there we only tie the single and larger Branch of an Artery, leaving the lesser to common Applications, from which may sometimes happen Danger, and more particularly when the Blood is thin and volatile. An actual Cautery is here likewise a Preservative against Mortification. First, by its *Eschar*; and, secondly, by invalidating the Necessity of straight Bandage.

How used.

To use the Cautery aright, there should be a flat Iron Plate to preserve the adjacent Parts, with a Hole thro' the Middle, made fit to receive the End of the heated Button on the Artery. *Hoc modo tutius est; atque minus vicinas partes lædit.* And in applying it, we are to observe, if not hot enough, it makes no *Eschar*, giving only unnecessary Anguish to the Patient: And on the other Side, if too hot, it then makes an *Eschar* indeed, but separates and loosens it at the same Time, the Security intended being either way equally eluded. But this is an Inconvenience that may be obviated by a quick or slow Application, as the Surgeon shall judge to the Degree of Heat in his Button. Sennertus bids us not to touch the Marrow, *cavendum tamen ne medulla aduratur.* I have seen the Stump bleed again when the *Eschar* has come off, a Month after the Operation.

The third Method by Deligation of the Artery.

Thirdly, by a *Deligation of the Artery*: This has justly the Pre-eminence in Practice, neither carrying the Dread a Cautery does, nor the Insecurity mentioned of Astringents: It can only be unsafe, when by a mistaken Method the Knot is slipped over the Forceps, (instead of piercing the

the circumjacent Flesh,) which sort of Knot, indeed, the Pulsation of the Artery soon throws off.

The proper and secure Way of Deligation, is thus: *Deligation, how perform'd.*
First, a loosening of the *Turniket* being made, and the Artery discovered by its *Impetus*, you immediately lay hold of it with a Spring-Forceps; and having the Arterial Needle ready armed with double Silk, and waxed, you are to pass it round, taking up a small Circle of Flesh, nigh the Mouth of the Artery, then comprehending a very small Linnen Compress between that and the Tie, you make fast with a close double Knot.

Some are of Opinion that the larger Portion of Flesh you include within this Circle, the securer must the Artery be from Bleeding, because (say they) Nature takes up a longer Time in separating a greater, than a smaller Portion; a Reason not of much Weight; for how small soever is the Portion of Flesh included, yet being sufficient to stop a present, it will be sufficient to prevent a future Flux; because any Portion when tied and separated thus from the Life of the whole, is thrust off by a *Syffar-cosis*, or Concarnation; and therefore the Mouth of the Artery must be as securely shut up by that intervening Substance, at the throwing off a small, as a great Portion.

What may be added to either of these three Methods, *Helps in the former Methods.*
as cojuvant, are *V. Section*, *Enema's*, cooling Emulsions, *Opiates*, or other different Means of Revulsion and Derivation.

There is a Necessity for this Operation, either when *The Operation.*
a Limb is so shattered by a Shot or Splinter, as to be plainly past a Possibility of Reduction; or when a Wound (tho' not large) happens in a great Joint, such as the Knee or Elbow; whence acute Pains and Convulsions are excited, (or probably would be,) endangering Life; and if healed, be not only useless, but troublesome; or, lastly, when any preceeding Hurt or Distemper has induced a Sphacelation: There are other Cases that may indicate Amputation; but in these there is little Room for Suspence.

Your *Apparatus*, or Appareil, should be laid in three Dishes; the first should hold your Instruments; Knife, Catlin, Saw, Arterial Forceps, and Needle; the second, a Lint-Pledget or two, half a Score others made of soft Tow,

Tow, and different Sizes, and with them a large round one, called a Cap, spread with some astringent Mafs to cover the rest; and in the third, your Rowlers and Cross-Cloth.

How the Patient must be placed for Amputating.

Thus ready, your Patient should be placed on a Stool; both that he may be supported behind; and that the Assistance about you may be more commodiously used. As to the Surgeon's Posture, it may differ to Advantage. When there are two Bones to divide, the Inside is undoubtedly best; because taking the lesser Focil with your Saw at the same Time, with the greater, there is not that Hazard of a Fracture or Luxation; but if your Amputation is to be made above the right Knee, or Elbow, then your Right Hand should be outward: You have greater Liberty in this Posture, more Scope for performing the Operation, and stand better for applying the Dressings.

Turniket.

We begin with fixing the Turniket: And for this Purpose, having drawn the Muscles tort upwards, we enfold the Thigh or Arm with a thick Linnen Compress. If it be the Thigh to amputate, we put also a Wadd under this enfolding Compress, on the Inside, for a better Compression on the larger Vessels that descend there: Then placing the middle Part of the Ligature exactly on it, the Ends are brought over the Compress with a double Hitch; and being tied down to the upper or outward Part of the Thigh, or Arm, the Turniket is put in, and twisted to a Degree sufficient to check or interrupt the Course and Motion of the Blood. This Ligature ought to be a Silken, or other Cord, that is not too hard, but very strong; for if it should break in the Operation, (unless you are very quick in supplying its Want with a strong Gripe,) your Patient is infallibly lost. As I remember it happened in an Amputation above the Knee I was present at, on Board Mr. C——. The Turniket broke; and while every Body was surprized and confounded for another, I instantly interposed, and with a strong Gripe supply'd the Room; when otherwise, the Man must have expired with the Flux in less than two Minutes. This by way of Caution, that Surgeons may keep a Presence of Mind in Action, and be prepared against such Accidents.

Besides

Besides these, we fasten two other Tape Ligatures at *Ligatures.* the very Place we are to make Amputation, leaving only Room between them for the Knife to go round. The Use of these are to swell the Flesh to the Knife, and guide it for a smooth Circumcision which you are now to make, bringing it at once as near the Bone as you can, and as far round. What is wanted of a compleat circular Cision, you are to supply with another Stroke of the Knife or Catlin; with which last also you are to separate the Flesh from between the Focils, and clear it for the Saw.

The Saw is to be set on both Bones at once, (if two,) and divided at as few Strokes as possible, taking heed in the Division, that the nearer you come through, the easier to move, lest the Bones should splinter: If that should happen, there is a Cutting Forceps described in the *Chirurgia Curiosa. Tab. II.* proper for pinching such Processes off. *How to use the Saw.*

Where the Bone is single, we chuse to take a Piece of firm Cloth to hawl up the Flesh from the Saw, (the Bone proving always better covered for it :) It is made by only slitting to the Middle; the Slit falls on the Bone, and crossing the Ends underneath, you use one Hand there, the other above. In doing all this, a Limb is to be kept steady and firm by an Assistant at each Hand of you, or instead of them (when it is a Leg to amputate) that Instrument in *Chirurgia Curiosa, Tab. IV.* made in Shape of a Wooden Leg, and fixed to a proper Height for resting the Ham in.

The Limb being off, I shall suppose the Hæmorrhage has been stopped by Deligation, (the Method most approved,) and proceed to the Remainder of our Work, *viz. the Dressing and Bandage.*

The Ends of the Bone are to be covered according to Custom, with dry Lint, (*sicca siccis gaudent;*) and to the Artery we apply thick round Pledgets dipped in warm *Ol. Terebinth.* one on another, to render it still the securer; for as that will be the deepest Part of the Stump where the Artery is, so without this Caution of raising it at least to a Smoothness, the Compression in Rowling would be least where it is most wanted: The rest of the Stump also, we cover with an answerable Number of Pledgets pressed out of the same; over them a large

Bones to be dressed dry.

large Cap armed with some astringent Mass, a Bladder of the like Dimensions, (made pliant by immersing in warm Water,) two long Compresses to cross on the Stump, and come to a Hand's Breadth, or more, above it; and, to fasten all, two Rowlers, wet in *Posca*, (Vinegar and Water.)

*Two
Rowlers.*

I chuse to use both of them single-headed: The first is short, and beginning close to the Edges of the Stump, is finished with six or seven Turns upwards: The other is very long; and having begun with a Turn or two at a convenient Height, is immediately carried cross the Stump as high on the other Side, and so returned backwards and forwards over all Parts of it, as our Length will allow, reserving only so much at last as will fasten with six or seven straight Circumvolutions, to make the Whole fit smooth and equal. If it be a Leg, the Knee should be always bent before Rowling, otherwise the Joint contracts a Stiffness that will difficultly submit to it afterwards.

The Cure.

To cure an amputated Limb, our Endeavours are in *the Beginning* to prevent Pain and Fever, and to procure Digestion; *in the Progress*, to hinder a *Fungus* and Exfoliation; *and, lastly*, to produce a smooth Cicatrix: The attaining these several Ends, resting chiefly in the Management of the Stump, is the Surgeon's peculiar Province, to which I shall principally confine myself.

*Remarks
on the first
Dressings.*

Our first Dressings have this in particular, of being always found troublesome to remove; for the moist and aqueous Parts of the Blood being dissipated by the Heat of the Part, the remaining *Coagulum* receiving some Mixture of the *Ol. Terebinth.* cements them like Glue: However, since it must be done, we facilitate our Work, by squeezing out Spunges of warm Water on them, till they grow supple, and are thoroughly moistened; any Roughness in bringing them away, would endanger a fresh Flux, so would a Fomentation, too soon used; because the Warmth of it relaxes the solid Parts, and makes the Motion of the Blood in the Artery stronger.

The first Opening of the Stump should be in about forty-eight Hours from the Operation; and the Dressing then changed for a Digestive.

℞ Ung. Basilicon fls. Liniment. Arcæi ℥iv.

Ol. Tereb. Lini & Hyper. a ℥j. M.

Or the Unguent. Digestiv.

To be renewed every twenty-four Hours after, to be applied warm and quick, in a Place least exposed to Air; and when done, the Stump placed on a soft Pillow, with a little Elevation, and kept moderately warm.

At our next and future Dressing, a Fomentation may be used, designed to give a Perspiration, and cherish the Heat of the Part, which of Consequence promotes Digestion. *Remarks on all future Dressings.*

In a Week, more or less, according to the Age and Disposition of the Patient, a good Digestion succeeds, on which the Pain assuredly remits, and the Fever, which was only symptomatical, vanishes: At this Period, therefore, there ought to be a remarkable Alteration of our Dressings, our great Care being now to prevent a *Fungus* and an *Exfoliation* of the Bone, neither of which can be better answered, than by forbearing any further Use of greasy Applications, for such allowedly do both; they foul the Bone, by increasing Corruption, and render the Flesh soft and spongy. I have seen in an aged Man, the Stump wholly covered with a thick *Fungus*; so as to oblige us to cut it off with Scissars every Day. For this Reason, an Alteration becomes necessary to lessen too great a Discharge; and prevent or remove a beginning *Fungus*, we must not on the other Side do it by Medicines too astringing; for when the Quantity of Matter is large, the giving too sudden a Check to it will occasion Apostemations, Tumors, and painful Contractions of the Muscles. Those that I have used, and found best to answer against such Consequences, are the following:

℞ Spt. Vini. Aq. Fontan. a. p. æ. cum Mell. Rosar. *Incarnative and Detergent.*
Educorat.

℞ Decoct. ex Herbis Fomentat. ℥viii. Aq. Regin.
Hungar. ℥iij. Ol. Tereb. ℥j. M. pro usu. Vel.

℞ Plegiatæ tepide expressæ a Fotu Fortiore,

These,

Of AMPUTATIONS and WOUNDS.

These, or such like, being moderately astringent, engross the Blood, as it were, from flowing to the Part, in a greater Quantity than is requisite for its Nutrition; and are also a fit Dressing for the Bone, as preventive of its Exfoliation, as dry Lint can be, of which some are fondly superstitious; and is a Choice, in my Opinion, more or less indifferent, as a Bone is to be lesser or longer Time exposed.

If the Wound is foul, dress with *Spt. Vini. Or, Egyptia* and Vinegar. Or if Maggots breed, (as I have seen great Numbers in Stumps,) the same. A Decoct. *Absynth. Gentian.* Or, a Tincture from *Myrrh. or Aloes.*

Exfoliation.

Where the Bone is single, and we have made use of that Cloth above-mentioned, it generally appears so well covered after, and guarded from the Intrusion of Air, that Exfoliation is often prevented, or (which is the same) becomes insensible; and on the other Side, where such a Caution cannot take Place, (as in the Leg or Cubit,) the Bones become necessarily prominent, and exposed to the corrupting Quality of the Air, and Fluctuation of Matter; both which concur to render such Prevention difficult, if not impossible; nay, perhaps, it would rather expedite the Cure (in these Cases) if we helped (from the Beginning) to foul it with the same greasy Applications we use to the Wound. Why the Teeth do not that are continually exposed; is their outward Cortex being stoney rather than bony; which once lost, they quickly moulder and decay.

There is another Observable or two, to be heeded in this Progress of the Cure, and they are these:

Cautions in the Progress of the Cure.

First, That Edgings be constantly used, spread with *U. Desiccata.* or, the *Ceratum Calaminaris* of Turner for facilitating and bringing the Dressings off clean and easy, and forwarding the Cicatrix; to which will very much contribute also a good Management of the cross Cloth: I enclose the four Ends of two suitable Lengths of Cloth, under several Turns of the Rowler above, and then crossing the Opposites on one another, contract the Lips of the Stump nigher daily.

The second is, to mind that the Incarnation do not swell in one Part, and sink in another, but that the Whole have a smooth and equal Surface; an End that must

must be answered by the different Applications of Incarnatives or Epuloticks.

Digestion and Cicatrizing, being the two principal Ends pursued in the Cure, I have shewn how the Obstacles of Pain and Fever to the first, and of *Fungus* and Exfoliation to the latter, may be best avoided or remedied, as our Dressings and Management of the Stump can do it. It remains in the second Place, to make these local Applications more effectual, that we prescribe a Regularity in the Non-Naturals, and give convenient Internals. The Patient should be kept in a warm Air, in an easy Posture, free from Passions, and with a spare Diet at first, and Phlebotomy, *Enema's*, Anodynes, cooling Emulsions, and Julaps, administered as they are alternately indicated. A few of the easiest Preparations are as follow :

Enema commun. Or, $\mathcal{R}$ *Decoct. Clysteris* $\mathfrak{z}$ viiij. *Butyrⁱ Saliti*, *Syr. Rosar.* a. $\mathfrak{z}$ ss. *Ol. Anisi* $\mathfrak{z}$ ss.

$\mathcal{R}$ *Decoct. Clysteris.* $\mathfrak{z}$ x. *Ol. Chamæm. Sacchar. Culinar.* a. $\mathfrak{z}$ iss. *Ol. Anisi Gutt.* viij. *Ægrum in dextrum latus esse collocandum & tepide injeci.*

For an *Anodyne*, $\mathcal{R}$ *Laud. Londinens.* gr. ij. *exhibend. Hora somni.*

Or, $\mathcal{R}$ *Eleët. Fracastor.* $\mathfrak{z}$ ss. *Laud. liq. Gutt.* xij. *Ol. Nucis Moschat.* g. j. *M.*

$\mathcal{R}$ *Aq. Cerasor. Nig.* $\mathfrak{z}$ ij. *Aq. Cinnamom. Fort. Epidem.* a. $\mathfrak{z}$ ij. *Laud. liq. Gutt.* x. *Syr. de Mecon.* $\mathfrak{z}$ vj. *M. F. haustus Hora Decubitus sumend.*

For an *Emulsion*, $\mathcal{R}$ *Amygdal. Dul. excorticat. Sem. Papaver. Alb.* a. $\mathfrak{z}$ ss. *Sacchar. Alb.* q. s. *Contundantur deinde additis Aq. Hord. ℥ij. fiat Emulsio Capiend. sæpe in die.*

$\mathcal{R}$ *Amygdalar. Dul. excorticat. Sem. quatuor Frigid.* a. $\mathfrak{z}$ vj. *Sacchar. Alb.* q. s. *optima una, contusis sensim affunde Aq. Fontan. ℥ij. colatur. fortiter express. adde Aq. Epidem. ℥ss. sumend. ad libitum.*

For a *Julap*, $\mathcal{R}$ *Julap. Analeptic.* Or the *Julap. perlat. Fullianæ.*

These, or the like, will be wanted most in the Beginning of the Cure, while Pain, Fever, and Faintness, afflict the Patient, and the Stump is indigested: But as these are found to remove, those may be laid aside again, and a greater Liberty in Diet assumed; yet still under such Rule as may best support Strength, and yet not generate a *Hypersarcosis*, which too-full Feeding will do.

I proceed now to an Observation or two, for supplying what is defective in the general Practice, particularly to shew what different Consequences I have found under either Method of stopping the *Hæmorrhage*; and this I shall do in two or three Observations, made after an Action in the *Lion* Man of War, Captain *Galfridus Walpole* Commander.

Our Fleet, under the Command of that brave Admiral Sir *John Norris*, lying in *Vaia-Bay*, near *Genoa*, March, 1710, 11. in order to embark some *German* Troops for *Spain* (the last, I believe, that were sent thither during those Wars, King *Charles* leaving *Spain* the September following,) we espied two tall Ships early in the Morning standing in for the Land, and after their descrying the Number and Strength of our Squadron, tacked off. On which the Admiral made Signals for our Ship, the *Severn*, and *Lime*, to chase.—We did; and at half an Hour after Nine in the Morning, came up with four Sail of *French* Men of War (from fifty to sixty Guns each) who were brought too in a *Line* to fight us: We were not out of hearing of our Fleet when the Battle begun, and therefore immediately on the Noise of our Guns, the Admiral sent other Assistance; but they did not arrive quick enough to save what the Sailors call a *Threshed Jacket*, having about forty Men wounded in an Hour's Time.

I. Observation on stopping the *Hæmorrhage* by Deligation.

I had my Dressings prepared in the Manner before observed, and amputated at five or six Fingers Breadth below the Knee,* stopped the *Hæmorrhage* by Deligation,

* This Distance is most commodious for a Wooden Leg; though Solinger a Dutch Surgeon, advises, to save as much of the lower Limb,

tion, applied Pledgets of warm *Ol. Terebinth.* a Cap armed with Astringent, &c.

For the Evening after the Operation, he continued very chearful, in a manner thoughtless of the Loss of his Limb; but next Morning, I found he had been uneasy, restless, and had a high Pulse, *Nausea*, and Thirst; an Alteration common, indeed, after such Pain and Ex-
pence of Blood and Spirits, and may furnish out two Remarks. *First*, That the Heat and Surprize in Action makes it the properest Time for amputating, Men meeting their Misfortunes with greater Strength and Resolution than when they have spent a Night under Thought and Reflection. And, *Secondly*, that a symptomatical Fever, more or less, is the sure Consequence of this Operation.

The present Patient I blooded, gave him diluting Drinks, the following Julap, and for two or three Nights successively, a Paregorick Draught.

R Cinnam. Fort. Theriac. a. ʒj. Aq. Hord ʒviii. Sal. Absynth. ʒj. Syr. Limon. q. i. F. Julap Dof. Cochlear. ij. per vices frequentes.

With these, and a Fomentation to the Stump every Dressing, we in less than a Fortnight brought on a tolerable Digestion, the Fever and Inquietude by that Means gradually vanishing; Circumstances that always indicate to me an Alteration of Dressing, and which, according to my constant Practice, was thus:

I spread my Edgings with *U. Diapomphol.* and covered the Interspace with Pledgets, pressed out warm from a Decoction of Fomentation Herbs, reserved clear for that Purpose, and mixed with a third Part of Spirit of Wine or Brandy.

K 2

The

Limb, as possible; for if the Motion of the Knee be preserved, an Artificial Foot (says he) may be fastened with Steel Springs and Screws on each Side, that will give more Strength and Security in Walking, than a Wooden Leg, but I believe this will not prove true on Tryal.

The Reason of this Alteration soon appears to those acquainted with Practice; for when Digestion is obtained, and the Fever abated, or gone, should you continue to Unguents and Digestives, the Stump would be soon over-run with a *Hyperfarcosis*, not only unsightly, but a very great Impediment in Cicatrizing, obliging often to the Use of a Vitriol Stone, or other painful Escharoticks, to keep an even Surface necessary to advance the Cicatrix.

The Practice above described had here the desired Success; the Flesh was rendered hard and ruddy by it, hindered in too quick a Growth, the Wound kept clean, and Nature left to Proportion out her own Measure in the Discharge, the Stump for that Time visibly lessening every Day.

As it contracted into a smaller Compass, I found myself obliged to wait for an Exfoliation, which, in the Whole, took up about seven Weeks, throwing off then in a deep black Scale; after which I met with no other Impediment, purged him once or twice, and finished the Cure.

Observation II. and III. on stopping the Hæmorrhage by Escharoticks.

JOHN RICE, and WILLIAM SMITH.

I had two other Amputations of the Leg, the Stumps of *Necessity* shorter than usual, and stopped the Hæmorrhages with *Vitriolum Romanum*.

The Patients felt from the Beginning a more than ordinary Pain, quickly inducing Fever, and the Consequence of that large Quantity of indigested *Synovia* from the Stumps, which, by the Way, kept also rigidly straight, as though convulsed: Effects, that might, perhaps in Part, proceed from our dividing the Muscles too near their tendinous Insertions at the Knee, but no doubt were chiefly imputable to the Escharoticks.

I endeavoured to relieve and strengthen Nature against the Assaults of Pain, by *Venesection*, *Enema's*, Anodynes, and contemporating Julaps; and to the Stumps, an assidu-
ous

ous Use of Fomentations, preserving them from the Air and Cold, as much as possible.

After a Fortnight this was the Issue: From one of them we never had any true Digestion, emitting instead thereof a deal of thin Gleet, and at length, from the extraordinary Pain that continued with it, a large Tumor formed round the Junction, filled with the same indigested Sort of *Serum*, which the natural Heat was too weak to concoct. I opened the Tumor, and on a Discharge of it, the Pain and Fever seemingly remitted, and, with warm Fomenting, gave Hopes for some Time of Success; but an obstinate Looseness supervening through his fretful and uneasy Temper, he kept languishing for about a Month with it, and died.

The other, though much older, was of better Habit; and by the same Means that had proved unsuccessful there, the Stump was at length brought to Digestion, and thence forward contracted every Day; which, for three Weeks after Amputation, had been indiscernable.

What I shall farther take notice of from this short Stump, is, That although the Joint had continued painful, and inflexibly straight for several Weeks, yet as the Wound closed into a lesser Compass, and covered the Ends of the Tendons with a Cicatrix, it gradually suppled, and became easy.

Observation IV. on stopping the Hæmorrhage after Amputation by Cautey.

Captain WALPOLE, Brother of Sir Robert.

This Gentleman had, likewise in the same Action, the Right Cubit so shattered, as to be past any Remedy but Amputation. I chose to do it above the Elbow; because the Fracture, reaching very near the Joint, would not admit the sustaining it against the Division of the Bones below.

The first Dressings, to stop the Flux, was only hot *Ol. Teberinth*. After viewing it a Minute or two, and no Stain appearing on the Rowler, I concluded all was secure, and caused him to retire to a Bed, nigh Hand, from our Hurry and Confusion with the other Wounded.

After he had lain some Time, I was alarmed with the News of a fresh Hæmorrhage, and found, at lifting up his Arm, so great a Quantity had issued through the under Part of the Dressings (unheeded either by himself, or Servants,) that when I came to him, I found his Speech faltering, his Countenance very pale, and so faint with the Loss of Blood, I feared his Expiring. On Circumstances so surprizing, I fastened on the Turniket again, directing a Cautery to be heated over half a Dozen Candles, and finding, when the Dressings were off, the the Blood to be thin and serous, ouzing through the Vessels, notwithstanding the strictest Compression, I applied it: The imminent Necessity and Danger is Excuse sufficient for so effectual, though obsolete a Practice.

The Patient at taking off the first Dressing, was faint and qualmish, and the Stump, through Strictness of Bandage, or Defect of Spirits, blistered and excoriated: These I covered with *Ung. Album* spread on Linnen, fomented the Stump well, and dress'd with a warm Digestive, endeavouring to relieve him inwardly with Cordials; and afterwards his feverish Intemperature, by Venesection, an *Enema*, and Emulsions.

At our Return to the Fleet, which was in two or three Days, I proposed to him the calling in two or three of our skilfullest Surgeons to advise with, not only as a Duty to a Gentleman of his Distinction, but a distant View, that the Care and Reputation which might accrue to me by their Assistance in the Cure, might possibly in Time place a Man in one of the King's Yards. He assured me, he was satisfied without: But I persisting, he pitched (as usual) on the Men of Name (the Surgeons of the Hospital-Ships.)

We differed in the Judgments and Management: They ascribed the Fever and Exaggeration of Pain entirely to the Cautery: I presumed, that the Fatigue of two Dressings, a greater Loss of Blood than ordinary, a Change of Lodging, warm Weather, and the Noise and Confusion of a continued Chace, might conspire something towards it; but granting the other Principal, (yet if done of Necessity, and what appeared then, the only Means of preserving Life,) our Aim now was not to cavil, but apply the proper Remedy; which certainly should have been

been in a long Use of the Fomentation at each Dressing, in the best Digestives, keeping the Stump always very warm in Flannel, and to have quickened this external Means of procuring Digestion, by allowing him more liberally in his Eating and Drinking, (a Regard being always to be paid, under such Accidents, to a Man's Customs in Health;) the Danger of a Mortification here, being plainly from a Defect and Paucity of Spirits, which this was the likeliest Way to restore. But our Digestive was not so good, under those *Masters of Skill*, as might have been: (*U. Basilic. Ol. Hyperic. p. æ*) The Fomentations not used so long, nor had the Stump that advantageous Warmth I proposed; and what was worse than all, the Patient restrained from an accustomed Glass of Wine, and tied down to a slender Sustenance of Gruel and Panada. This kept him in perpetual Anxiety and Inquietude: which he sustained with equal Fortitude: And when at length, I represented it warmly, to be in a great Measure the Effect of our Proceedings, and which we perceived likely to prove a *Mortification of the whole Man*, they were persuaded, and the Patient relieved by a better Rule, (I mean that just mentioned.)

However it was a Fortnight from the Operation, (an unusual Length of Time) before we perceived any Thing like a Maturation from the Stump, purely from this wrong Method: But when on reforming it did appear, the Pain and Fever immediately mitigated, and is an Indication of infallible good Portent.

But here again, at this critical Period, instead of cherishing the Maturation, which would have entirely dispelled all Danger, we changed our Digestive for Dressings of *Aq. Calcis*, on which a rigid and painful Contraction of the *Extensor-Muscles* ensued: Thus accounted for, That in Operations like this, accompanied with great Pain, Nature always directs a greater Affluence of Blood to the Part; and when by soft and proper Applications, its Conversion to Matter is assisted, the Cure advances with Safety and Ease; but if the unreasonable Restrictions of a Medicine (*Aq. Calcis*) denies this Liberty, and gives a hasty Check to the Discharge, perverting, as it were, Nature's Course, then the Blood that was wont to undergo this Mutation stops, and riots in the Muscles, producing sometimes such painful Contractions as we here met

with, and sometimes Apoftemations. Agreeably to this Reasoning, I should have returned to a good Digestive, *i. e.* not only the topical Applications for it, but have taken off the Restraint in Diet, he was again put under on this Account; because in my Opinion, the Stomach itself (where a Distemper has not perverted the rational Faculty) is the best Director as to the Fitness or Unfitness, Quantity or Quality of Food to be taken in, and a temperate Freedom is really more necessary at such Time, to support against the Efforts of Pain and Uneasiness, and which, if not so, the Stomach would nauseate and reject. But although the Accidents plainly arise from a sudden Change of Dressings of so different Intention, yet it would have been acknowledging a Fault to have said so, which, in Consult, can hardly ever be: The Faculty of *Warwick-Lane* know this, That whoever is called in upon another, is deemed of the Superior Capacity, and on Miscarriage is not culpable in Point of Judgment; it was the Patient's unhappy Neglect only, that he did not call sooner.

We dressed on with Pledgets pressed out of *Aq. Calcis*. The Tumor and acute Pain following (with few or slight Intervals of Ease,) for the Space of a Month or five Weeks, till apprehending the *ill* Consequence which my Coadjutors, I knew, would unwillingly take a Share in, I over-ruled, with some Importunity, to change our Edgings for the softer Unguents; which making, larger than ordinary, a more assiduous Use of emollient Ointment and Fomentations, and continual reclining on a soft Pillow, we found at length the Cicatrix drawing in, and those Accidents gradually diminished.

Our last Alteration was a Pledget of *U. Diapom.* completing the Cure in eight Weeks, but without Exfoliation; which became the Occasion of some after Trouble, the Bone, at several Times for four Months throwing off some small Scales: The first Notice was by a light pricking under the Skin, which growing still more troublesome, would make their Way through. After this the Cicatrix remain'd firm.

I had watched two or three Nights with this Gentleman, immediately succeeding the Operation, (though 40 wounded Men to look after;) supposing a Tendernefs and Respect would engage his good Opinion; consequently his Interest; but notwithstanding this, and all my
future

future Fatigue, and extra Work, he remained as *calm and undisturbed* after Recovery, as *Burnet's* Devotee; never gave me a Glas of Wine, or Thanks for it, the Reverse of his Brother, loving Cheapness in all Jobbs. I must add, he suffered me to pay for making up Dr. *Moreton's* Prescriptions for him at *Leghorn* and *Genoa*. A Proof of that thin and avaricious Disposition abovementioned, that made the Cure so troublesome, and which, had it ended then, I had saved. For if a Man is to go out of his Invoice, a Physician has it in his Power, in Conjunction with a Milk-sop Commander, to make him do a double Duty, and for nothing.

SECT. I.

GUNSHOT WOUNDS of *particular Parts*.

In our late *French* Wars, in the Year 1707, being stationed in the Channel, we now and then, in the *Tartar*, used to lose the Squadron, and make little Southerly Excursions, in hopes of a Prize; or to meet the *Dutch* Vessels from *Bordeaux*, who being our good Friends and Allies, we made to traffick with us at pretty cheap Rates.

One Afternoon, as we were praying upon this Occasion, we espied a Ketch bearing down to us with full Sail, and three Ships chasing and firing at her, as a Decoy: She ran close under Stern (as we *Lay too*) but fearful of their first Design, which was to *Board us*, only hoisted their *French* Colours, fired a Volley of Small Arms, and *Struck*.

We had like to have been too late in discovering the Cheat, the Gale having brought the other three Ships very near, (before we could get our Boat out to take Possession of the imagined Prize,) which we were about to do, but not being answered by proper Signals, turned tail, and were chased by them: We were a *Clean Ship*, and Night drawing on, favoured our Escape, without any other Damage than the following.

EXAMPLE

EXAMPLE I.

A penetrating Wound of the Thorax.

James Smith, one of our Seamen, received a Musquet Shot through the *Thorax*; it struck on the Body of the Right Pectoral Muscle, and passed out close to the fifth or sixth *Vertebra* of the Back, breaking off Part of their transverse Processes, as appeared by several Offices discharged afterwards at that Wound: I imagined this being the lowest of the two, the Eruptions from the *Thorax* would have been here; but it not proving so, I shall only take notice, that it healed in a Fortnight or three Weeks, with as little Purulency as might be expected, had it been only superficial.

The Stress of the Cure lay at the Orifice before; which I shall the more precisely examine. I extracted thence, at the first Dressing some Bits of Rag, which had entered with the Bullet, and were within View, dipped my Tent in warm *Ol. Terebinth.* because of a little bleeding that appeared, a *Ceratum Diapalm.* over, placed him in Bed, half erect, but leaning towards the Wound, blooded, and prescribed, as follows:

℞ *Elect. Fracastor.* ʒss. *Antim. Diaphoret.* gr. x. fiat *Bolus superbib.* *Haust. sequent.*

℞ *Herb. Pectoral.* pj. *Rad. Liquirit.* ʒj. *Sem. calid.* ʒss. coquant in *Aq. Hord.* *Hiis. Colatur ad Vin. Alb.* ʒiv. *Mell. Anglican.* q. s. pro potu commune.

For the first Week the Patient was feverish, spit now and then bloody, had a very large Tumor spread over the whole Breast, made up of extravasated Juices, that might be felt fluctuating between the Muscles; and what was worst of all, a Discharge of six or eight Ounces from the Wound, at every Dressing, (which was twice a Day,) of a bloody *Serum*, sometimes mixed with Grains of a fleshy Substance, that prostrated his Strength and Appetite, and made him faint.

The Question now turned, whence this Discharge was? whether beneficial? and the Service Tents contributed towards it? Neither of them, perhaps, im-

proper to expatiate on in the Prosecution of this Cure. And, *First*, That the Discharge was partly external, might be judged by the daily sinking of the Tumor on the Breast, and yet the Quantity, Liquidity, and particularly its Expulsion on the Patient's coughing, were convincing Proofs, the greater Part was internal. How it should rather take its Course this Way, than fall on the *Diaphragma*, because the Matter of it was not from the Cavity, but Substance of the Lungs, and from the peculiar Make and Adhesion of that Bowel to promote it; for if they are not immediately tied to the *Pleura*, yet they have so close an Adherence, (especially if tumify'd,) as makes the Wound but one continued Orifice, or Conduit from without, into their Substance, demonstrable by the Force the Air comes out with, when they are penetrated; which would be scarce perceptible, were the Wound there to recede any Way from the external one; and again, were they not close to the *Pleura*, more would fall than does (between it and the outer Membrane) on the *Diaphragma*; but by this apt and convenient Situation, and peculiar Make, (separate little *Lobes*,) it comes to pass, that when the internal Membranes and Vesicles, constituting their inward Substance, are swelled and loaded with extravasated Juices, from the torn lymphatick and capillary Vessels, that the direct Course of throwing off this Incumbrance, must be through the Wound; and the Breast being more dilatable than the hinder Part of this Cavity, their expulsive Tendency is more that Way; and therefore the Wound that is forward, though higher, can and will better (with a proper Posture) divest them of any extravasated Load, than that behind, though inferior.

Hence we may learn, that whoever shall endeavour to pervert this Course of Nature, in Wounds of the Lungs, under Pretence she must be relieved by an *Empyema*, Discharge by Urine, Expectoration, &c. must inevitably hurry on fatal Symptoms, since none of these Ways can discharge so much, or so seasonably, as is requisite; and also that those do endeavour it, who obstruct this natural Course at the Wound, with large thick Tents, and tort Bandage.

Secondly,

GUNSHOT WOUNDS.

Secondly, As to Tents, how and in what Manner they were useful here : And that was by keeping the Wound open, they facilitated the Expulsion of those tinctured Serosities, little Particles of Bone, and Bits of Membrane that I have observed were discharged from within, and at the same Time conveyed a proper Medicine to the Bottom of the external Wound, for forwarding the Separation of the *Eschar* ; which being always soonest at the outward and most exposed Part, it would have fell out (had the Orifice been dressed only with a Pledget) that the *Eschar* had come away soonest there, and so contracting had prevented, or at least impeded the necessary Work of Extrusion ; they were therefore highly necessary, for the more is left behind, the greater Danger of Inflammation, *Phthisis*, or *Fistula* : And my Manner of making them more effectual at this Time, to the Purposes intimated, was to have them soft, slender, of a Length, short of the Thickness of the containing Parts, and dipped in a warm Digestive. I left a Thread to it always, made a soft anointing over the Breast of *Ol. Amygdal. U. Dialthæ. a. p. æ.* a large discutient Emplaister, and thick Linnen Compresses braced with a Flannel Jacket.

I have hitherto considered the Patient only to the first Period of seven Days ; it remains to give other Observations in the Sequel of the Cure, particularly as they relate to the Tents.

About the seventh Day the Air came out at the Wound with considerable Noise and Force, which till then had been scarce perceivable, either because the Patients Want of Appetite and Weakness made the Office of the Lungs performed more easily ; or that the *Eschar*, Gun-shot Leaves, obstructed its *Exit* ; or, *lastly*, that the Pain and the Tumor of the Muscles contracted it closer, or perhaps altogether ; and now, as the Tumor began to discuss, Appetite and Expectoration to mend, and the *Eschar* to drop off, the Air and Extravasation had a freer Passage, and the Discharge lessened.

About the fourteenth Day the Discharge having diminished considerably, and a Digestion appearing on the Tent, I rather lengthened it, and sprinkled the upper Part (as often as wanted) with an Escharotick, to prevent the Orifice contracting too fast, and for laying a
Found.

Foundation of incarning from the Bottom. Every Thing now contributed to help us; for after two or three Days more, scarce any Thing came away at the Wound with coughing; and having a plentiful Expectoration, and sometimes a thick muddy Urine, I endeavoured to assist those favourable Evacuations with pectoral Drinks, Apozems, &c. shortening the Tent gradually; and at the End of a Month or five Weeks, threw it quite out and healed. He continued after this, afflicted with an Asthmatick Cough for two or three Months; but recovered of that too at length, and remained only somewhat weakened in the Motions of the Arm.

From these latter Periods of the Cure, we may further observe, concerning these penetrating Wounds by Gun-shot, *That they are less dangerous, if they do not hit on large Vessels, than Wounds made by sharp Instruments*; because the Celerity of their Flight makes a superficial Extinction of Heat as it goes, which lies as an *Eschar* or Cover on the torn Vessels, not thrown off, but by a succeeding Substance that closes them.

When these discharges are purulent and copious, it is of ill Sign, and argues an Abscess formed in the Lungs, which will a long time, if not continually, want the Orifice kept open for its Extravasation like a *Fistula*; done either with Sponge or *Gentian* Tents, the close Adhesion of the Lungs to the *Pleura*, and uniting by the Circumstance of Solution, makes the Orifice of the Wound more commodious for this, than were it at any other Part, and more difficult to heal than keep open while any thing remains.

EXAMPE II.

Penetrating Wound of the Thorax.

Daniel Rainwater, in the Year 1710. in a Quarrel at a Bawdy-House in *Leghorn*, received a Push with a small Sword, under his Right Pap, which we could probe to the Depth of three or four Inches; the Air came out waving the Candle, when nigh, and a small Difficulty of breathing with it.

GUNSHOT WOUNDS.

I suffered him to bleed at the Wound pretty much, took eight or ten Ounces also from his Left Foot, dressed with warm *Ol. Tereb.* a Cerate over, and put him to Bed with a quieting Draught.

Next Morning the Symptoms were worse, and (as in the foregoing Case) a large Tumor was spread over the Breast, which felt fluctuating between the Interstices of the Muscles, but no Discoloration.

The Penetration of the Wound, I considered, could not be of use towards discussing this external Tumor; nor (as it appeared small, and almost closed,) of much Benefit to the Lungs, supposing any Rags of Garment carry'd in, though with a sharp Weapon; wherefore I concluded, keeping the Wound thus open with a Tent, and facilitating the Intrusion of Air, was to urge Putrefaction, and aggravate the Symptoms; and therefore I kept on only a small Pledget of common Digestive, a Cerate over, warm Embrocations, and Flannel to the whole Breast, with Panada and pectoral Decoctions for his Diet.

In a few Days his Breathing grew easier, the Tumor began to disperse and in three Weeks was totally dissipated; the Matter of it, I presume, by help of external Warmth, Friction, and a quiet Position, re-mixing with the Mass of Blood, as in *Ecchymosis*.

EXAMPLE III.

An Eye struck out by a Splinter making one Side of the Os Nasi and Spongiosi bare.

Alexander Henderson, in that grand Naval Fight of ours with the *French* off *Malaga*, 1703. had his left Eye struck out by a Splinter, making that Side of the *Os Nasi* and *Spongiosi* bare: and from which several little Splinters of them were easily drawn away with the Forceps. I cut away the lacerated Teguments in the Wounds, as far as they appeared to be insensible; dressed it and the Bone immediately with equal Parts of *Tinct. Myrrh.* a Fomentation and Decoction warm'd; over that again Pledgets of Digestive, a Compress, and a double Fold of Linnen pinned down to retain all. Where one Side of the *Os Nasi* was perceived loose, stricter Bandage

Bandage would have depressed and disfigur'd: Instead of which, I advis'd him to practise the Smoothing of it, with his Finger frequently, that it might fasten evenly.

In six Weeks the Wound was incarned, and healed; but soon gave Notice by a pricking Pain, Tendernefs, and Tumor about it, that some Officles or Exfoliation was further to be expected. The Cicatrix being thin, I broke through it with my Probe, and enlarged with the Scissars, discharging a foetid Matter.

A small Scale or two soon came away by the Wound; as did also another thro' his Nose, (on blowing of it;) after this it healed, and continued firm.

EXAMPLE IV.

A large GUNSHOT WOUND on the Neck behind, baring Part of the Vertebrae.

Thomas Gibbs, in the same Fight, received a large Gunshot Wound behind on the Neck, baring Part of the Vertebrae: He lay for dead, and had been thrown overboard, (as such,) but for some small Signs of Life, which others of his Gun-Mates perceived in him.

My Intention here (as in all Gunshot Wounds) was to bring away every Thing extraneous, very loose, or jagged; to wash the Wound well with a warm spirituous Decoction; and then to fill the muscular Parts up to a Surface with Pledgets imbibed full of the Digestive heated.

Next Day he gave Signs of great Uneasiness; but after four or five more, that a diligent Use of our Fomentation, and soft Dressings had begun a Maturation; he grew easier and walk'd about.

At a Fortnight the livid Colour in and about the Wound (the common Attendant of Gunshot) was dispersed or digested off; but then as the Sense quicken'd, the Head and Neck contracted very much to the Left; and the upper Lip of the Wound hid an Inch within the inferior, which spread in a *Fungus* over it.

To prevent the ill Prospect that seem'd of an unseemly Cicatrix, a stiff and wry Neck, I thought it adviseable to keep him constantly to a supine Position, whereby

whereby the Fibres of the Muscles might the better answer in their Rectitude and Length ; but our Patient rejected it, he being too alert for such Confinement, and indeed there proved no Necessity : For soon after, when the Wound was thoroughly malaxed with Maturation, the upper Lip of it appeared in Sight again, and depressing the other with Compress and Escharoticks, a Union was confirmed in about two Months, leaving little Obliquity or Stiffness.

EXAMPLE V.

A large Gunshot Wound, and Loss of the Glutæi Muscles.

John Carter, had a Splinter in this Engagement, come close to his Groin, and in passing off carried half his Buttock away. We laid him by at present among our other Wounded, with a slight Astringent Application : Next Morning he was found in grievous Pain, the Wound very large, a great Part of the *Glutæal* Muscles on that Side being torn away, the *Ossa Innominata* bare in Part, and the whole, black, livid, and insensible externally. I made superficial Scarifications to the Wound now, and next Day applied three or four cauterising Buttons, (one after another,) where the Insensibility or Colour led me to think a Mortification begun ; and this without much Complaint from the Patient, filling the whole with thick Pledgets of Tow, dipped in *U. Ægypt.* hot.

In a Day or two, I had the Pleasure to see the Gangrene checked, signified by a red Circle round so much of the Lip as I had cauterized nigh, and is Nature's Effort to separate the Eschar, the remaining Part that had been left undone, and now covered with stinking cadaverous Sloughs, I repeated the Cautery too, a little at a Time, for two or three Days, extracting now and then a Shiver of the Splinter and Bone, which was carefully look'd after at every Dressing.

When I had finished the Cauterising necessary, I immediately dressed the whole Wound with hot Digestive, used the Fomentation very warm, and half an Hour at least every Dressing wrapping a dry Stupe wrung from it,

It, and a large Flannel-Roller round all : Inwardly the best nutritive Food we could get him, instead of *vulnerary Decoction*.

In eight Days most of the Sloughs were separated, and in twelve all that little red Circle, or adjacent Inflammation vanished ; but then the Largeness of the Wound gave such an Increase to the Discharge, that from a chearful Disposition he became remarkably weak and depressed, more so by a Looseness supervening, that very much abated the Hopes of his Welfare.

I kept him to the white Decoction, and an Opiate every Night, which relieved a little ; but to the Wound which I consider more essentially, (those being only the Dependencies of this,) there seemed two Intentions necessary ; 1st, Was by all the Means we could, to lessen the Discharge ; and 2^{dly}, to keep the Matter from insinuating among the Muscles above or below : It ouzing from all Parts on any Pressure as tho' rotting.

Here the vulnerary Decoction came in Use, not to drink, but to dress him with, mixed half Brandy or Spirit warm ; and is always my Method when the *Eschars* of any large Wound are separated, and Digestion obtained : increasing your Spirits, (and Astringents in the Decoction,) as you design to pursue more or less of this Intention. For here is the Caution again, if you are too sudden in the Check, you give Room for Tumors and Apostemations elsewhere ; as was the very Case of this Man. I dressed him every Day as above ; and to answer the second Intention, made Compresses from the *Perinaeum*, the Buttock, and on every Side towards the Wound, giving his Position in the Cradle, as great a Tendency also as could be consistent with any Ease : The Quantity of Matter lessened presently, and only a thin *Synovia* from the Bottom of the Wound at the Bone, (common where the Tendons and Ligaments are torn ;) but a large, painful, and discoloured Tumor, at the same Time, spread itself at the anterior Part of the Hip, down the Abdomen into the Inguen and *Scrotum*.

It was now about a Month from his being wounded ; and though this was a new Misfortune disheartening to our Patient, yet I did not think it equal to the Advantage we had in lessening the Discharge ; for now he daily

L

reco-

recovered Strength and Spirit, the Wound incarning, and growing ruddy from all Sides. The Tumor indeed required Incision, (the Matter fluctuating under my Finger;) but I purposely omitted it for a Week, that my Patient had become heartier; and then opened and cured as in other Apostemations.

The Wound was nigh three Months in filling and cicatrizing, leaving a prodigious Scar, and great Lameness and Weakness on that Supporter, while I knew him, which was only the following Winter.

Scars.

Scars are always equal to the Loss of Substance in Wounds at first: Nature has a Measure in the new Cover she makes of Flesh: Otherways we might incarn to an even Surface, and skin the deepest Wound like a Scald, (a little rough and shrivelled:) But, I say, endeavouring to exceed this Bounds, is only creating a *Fungus*, that will be an Impediment in Cure; and tho' we may assist, and it is our Duty, with Compress, Rowling, and Incarnatives, yet Nature, for the most Part, and in spite of our Teeth, will form the Cicatrix to her own liking,

The Continuance of Scars after the Cure of Wounds, Burns, or in the small Pox (in almost the same Likeness) has been used as an Argument, that the solid Parts change little or nothing after Maturity.

EXAMPLE VI.

A GUNSHOT WOUND on the temporal Muscle.

William Lambeth, by a Splinter, received a lacerated Wound on his right Temple; the present small Flux of Blood was restrained with a Pledget of *Ol. Tereb.* and the Head Bandage: Our future Dressings a hot Stupe, or two, and the Digestive on *Lint* Pledgets

Convulsions from the wounded Part recovering its Sense.

The Sloughs separated deep, and the Wound digesting, I changed for the vulnerary Decoction afore-mentioned; and whether it was from this impacting, and as it were, acidulating what should discharge, or rather a necessary Consequence of increasing Sensibility in the Wound, he unexpectedly, about the twentieth Day from receiving it, and when the Wound was brought within the Compass of a Shilling, was seized with extreme Pain

Pain there, stretching to the other Temple; and so affecting his whole Head, that he fell into Vomitings, and convulsed in his Limbs and Body. I blooded him, applied a large Vesicatory to the Neck, changed his Dressings, and gave at Night a composing Draught: Next Day he vomitted again, and had involuntary Contractions of his Arms, though not to the same Degree, nor indeed, ever after that I knew; the Wound being cicatrised in a Month.

The Use and Inference I would draw from this Chapter more particularly regard the Navy; and what Mr. *Wiseman* has writ upon the Subject.

And *First*, As in Action Men are more attentive *To have* to Life and Safety, so Surprise and Warmth of Spirit, *ready* when Life has made a glorious Escape, makes them *Judgment* more regardless of their Wounds; and therefore such as *in Action.* are judged curable, should have immediate Extraction of what is extraneous in them; or if a Limb cannot be preserved, should then be amputated. Your Eye, Probe and Fingers, with the Patients Complaints, will give Directions; and placing him near the Posture in which he was shot, will facilitate the Search: Where you are to take Notice not to open your Forceps in any dark Path, lest you tear away a Nerve or Tendon. What you do not remove while the Parts are flexible and warm, will very difficultly admit of it afterwards, when Pain, Tumor, and Fluxion comes on; nay it is better then to leave the Remainder to suppurate. Sometimes a Bullet if not drawn out, eludes the After-Search strangely; will slide through the Interstices of the Muscles, from a Thigh to the Leg, the Arm and Shoulder to the Cubit. A Slug * shot in at the external *Canthus* of the Eye, apostemated on that Side of the Neck, and the Slug was felt on the *Os Jugale*. Another, which † was shot between the Nose and the Right Eye, into the *Ethmoides*, used to rowl to and fro over the Roof of the Mouth some Years, and was taken out by an Incision through the *Os Palati*. A Shot in the Small of the Leg taken § out at the Inside the Thigh.

* *Wiseman*, p. 412.

† *Ibid.* 417.

§ *Ibid.* 411.

Thigh. — On the Outside the Arm, cut out below the *Scapula*. *Turner* says, he cut out a Pin from a Woman's Thigh that entred at the Calf of the Leg.

Preparation for Action.

Secondly, in War, the Surgeon always should have Boxes of Dressings ready, Turnikets, some Tents, Pledgets, Buttons, and Doffils, in Sorts a great Number, without being armed; Rowlers, Compreses, Bandages, *Ferulae*, *Laminae*, of different Sizes; and when the Ship is preparing for Battle, to arm your Needles, to lay the *Apparatus* for Amputation particularly, and your Instruments in order, (as at p. 123.) the Ollop and Cable Tiers are cleared and spread with Canvas, for receiving your wounded Men, the Cockpit separated for Operations and dressing them, whence they are to be removed.

That every Thing may be in the best Readiness on your Side for their Reception, tear up your old Ensign for present Use, mix up a Bason of Astringent, and have two or three of your Caps spread with it, a Pannikin of *Ol. Tereb.* with others of Digestive, and *Spt. Vini*, some Pledgets ready spread with this; a large Rowl of Cerate well malaxed with *Tereb. Venet.* to make it sticky; two Chests, and a round Stool, to rest your Wounded on for Operation, or Dressing; round the Stanchion fix some Boards for a Dresser, and covering with a Piece of Bunting, lay your Pocket Instruments, and such light Preparations as are of immediate Call, (but reserve the Bulk always in your Cabin, where they are likeliest to lie in Order, and unmoved.) On each Side the Stanchion, and round you, place some large Lights, in Sticking-Iron Candlesticks, as taking least Room, and undisturbed by the Motions of the Ship; three or four moving ones also, and Snuffers.

Thus ready, the Surgeon is to consider, that Compound Fractures and Amputations will take up necessarily near the Whole of his Time. Flesh Wounds, especially by Great Guns or Splinters, are commonly large enough to discover any extraneous Body, to be extracted presently with your Fingers or Forceps; or if any Bits of Rag are suspected out of Sight, inject forcibly with Wine and *Ol. Tereb.* warm'd; if a Flux of Blood (very rare here) use the latter only, with Pledgets; concluding with one or two of those already armed with

with Digestive, or a Piece of Cerate, and a Bunting Rowler. But the other Cases plead strongly for Redress, and require abundance more of your Time to do it: The several Processes herein, I refer to what has been already said under those Heads; and shall only add here, that you are to be quick, as well as careful, in what Help you administer; for if the Action be warm, without Forethought, you will be in Confusion presently: And this Forecast lies in not suffering such wounded Men as can walk, and help themselves, to take up any Part of your Ollopp, (especially that nearest you,) but move on to the Hold or Foreship; and those more helpless to be laid by your Assistants in their Stead, keeping your Cockpit as clear as possible. To all we must give Cordials at this Time; and Wine has, in my Opinion, the Preference; because we are to quench Thirst, as well as refresh the Spirits.

Thirdly, Maturely weigh the Necessity of Amputations before performed; because there have been great Losses of Bone supplied by Nature, and many have done well without. In Battle, indeed, you have Limbs so shattered, and hanging only by little Portions of the Muscles, as leaves no Room to hesitate; and these might be smoothed off with a Razor, (less dangerous than the Operation;) only it seldom happens, but that the Laceration of the Flesh, the Shivering of the Bone farther up, or the Length, forces you a-new, if you would have a commodious and smooth Stump.

Fourthly, In a further Prosecution of Cures in Gunshot Wounds, we shall find that most of them, with the first Leisure, will require Venesection, Clyster, Nature commencing better Efforts after a little Ventilation. But * Purging at the second Day's Dressing, I cannot approve; or any Thing that is likely to divert Nature from a Maturation. Certainly, *Fomentations, Digestives, and Cataplasms*, are the proper Means to be taken; the latter no way inconvenient in the Navy, where a Copper-Full of Oatmeal is boiled three Times a Week, (as good for Use as any,) and may be made more serviceable by

*The best
Means
with Gun-
shot
Wounds.*

L 3

adding

* *Wiseman's Surgery*, 414.

adding Wine or Brandy to your Water in boiling, and at the Conclusion throwing in a little *U. Dialthæ*, or other Emollient.

Colour of
Gunshot
Wounds.

When Gunshot was novel, these Wounds, by their livid Colour, were taken to be gangrened or poisoned; and not unlike the former; for we find the Extinction of Heat is owing to the Greatness of the Contusion, (as the Ball or Splinter came with greater or less Force, direct or assant,) and are sometimes to a great Depth, calling for Scarification and Cataplasms, to help forward the Separation of the *Eschars*; *Omne quod contusum, necesse est ut putrescat, & in Pus vertatur*: But there is this Difference, that where an internal Cause conduces, then, (as in Cancers) though the outward Accident be slight, it is extremely dangerous: But in these Wounds (though large) there is no Danger on account of Colour or Extinction of Heat, unless a very ill Habit and preposterous Method of treating them induce it.

Spasm.
Cynicus.

Fifthly, Mr. *Wiseman* * has observed a Convulsion upon these Wounds, a Forerunner of Death: But there are Exceptions to this Rule; for though of very dangerous Prognostick, they are not always fatal; the greatest is from that Convulsion called *Spasmus Cynicus*; a Symptom frequent and fatal among our Wounded in the *Malaga* Engagement, 1703. (the *Risus Sardonius* of the Ancients, who are said to have brought it into a Proverb, from these People sacrificing the Aged with Mirth and Laughter. Others a People of *Africa*. Others say, the name is taken from a Herb in *Sardinia*, that eaten is apt to produce this Effect.)

A Mortification being what I have seen frequently happen after an Amputation, it may not be improper in this Place to subjoin the Cause and Cure of it.

VII.

* *Wiseman's Surgery*, p. 437.



VII. MORTIFICATION.

MORTIFICATION is divided into *Mortifica-*
Gangrene, and *Sphacelus*; which differ on-
 ly in Degree, the one being an Incipient *tion distin-*
 (i. e. has invaded superficially,) the other a *guish'd in-*
 perfect Mortification. In a *Sphacelus*, the *to Gan-*
grene and
Sphacelus.

Part is altogether void of Heat or Sense, even the Nerves and Tendons; and therefore, past any Remedy but a new Excision: In a Gangrene it is not so, yet dangerous, according to the Advance it has made towards that, and seizes, (as Mr. *Wiseman* says,) in an Order of Progression, *First*, The soft and fleshy Parts, next the Tendons and Ligaments: And, *Lastly*, The Bones. But herein that Author is mistaken, a Gangrene sometimes instead of last, beginning first at the Bone.

To a right Understanding of this truly direful Disease, and the Remedies for it, we must learn to distinguish between what is an *Oesthumenos*, (or Tendency to,) and what is really a *Gangrene*; because their Treatments should be entirely opposite.

A Tendency to, or the Fore-runners of, a Mortifica- *Signs of a*
 tion, are great Pain, Indigestion, abundance of thin *beginning*
Sanies from a Wound, a large Tumor, either *Phlegmo-* *Mortifica-*
noide, or *Erysipelatous*, and accompany'd with a Fever. *tion.*

Now, in whatever Wound or Ulcer these Accidents happen, if they should be immediately treated as a begun Mortification, *viz.* either with Precipitate, in hopes to thicken that *Sanies*, or *Ichor*, to a Digestion; or with strong Fomentations to the Wound, and Cataplasms of *Theriac. Venet. & Spt. Vini* mix'd, (as are commonly used,) the Irritation they give would increase the Fluxion beyond what the Weakness of the Part is able to encounter with, and consequently suffocate its Heat; so that what we feared, and (as we thought were a

MORTIFICATION.

Resisting) comes upon us, *i. e.* *Putrefaction*, and *Gangrene*: Contrarily therefore, we should treat such a Tendency with Lenients, our Business being here to contrive what may soften the Acrimony of Humours, relieve the Tension of the Solids, and ease the Pain, as the best Means to promote Digestion; which under the Symptoms aforecited must be attained, or the Part mortify. The best Medicines for this Purpose are the mildest and least irritating; foment only with a simple Decoction of Sage, or Elder-Flowers, and that purely to give a Perspiration to the Wound or Ulcer, *U. Basilic. Desicc. rub. d. p. æ.* and round the Whole apply the following Cataplasim thick, it is not inferior to any.

R Farina Avenac. cum tantill. Croc. bulliat ad Consistentiam. Cataplasim. finite adde Axung. Porcin. 3j.

To these must be added proper Evacuations, to divert the Fluxion; to which likewise a spare Diet, and an *Anodyne* now and then, will very much contribute.

Signs of a confirm'd or perfect Mortification.

If this Tendency, or *Oesthumenos* end in a Mortification, the Signs that evidence it, are a pale and livid Colour of the Flesh and Skin, Vesicles spread up and down, and a sinking of the Tumor; but chiefly, it is known from the little Share of *Heat, Sense, or Feeling*, that is found in the Part, and the foetid Smell that arises in Proportion as those are extinguished.

Happens in Amputations, from three Causes.

First, Age.

To apply this more particularly to Amputation: A Gangrene, when it succeeds that Operation, is either through *Age, strict Bandage, a bilious or other vicious Disposition of the Blood.*

First, Age occasions it through a Paucity of Spirits, the Symptoms soon displaying themselves after the Operation: For when Men are already sunk with declining Years, their Spirits on such an Operation naturally recoil, as it were inwards, to succour the Principals, and keep up winking Life: Whence the Stump becomes deprived of that Supply on which the Life of it depends, and so a low Pulse, Qualms, Faintings, Convulsions, and cold Sweats ensuing, their Misery in a short Time terminates in Death.

Secondly,

Secondly, Strict Bandage is a more common Cause than the former; and is the Occasion of it in Amputations, by intercepting the Blood and Spirits repairing thither; whence the Life of it is cut off. *Secondly*, Strict Bandage. The only Sign discovering to us a Fault of this Kind, is the acute and vehement Pain that instantly succeeds tort Rowling: I have known it so great, as that a Patient has chose to undo the Bandage (though at the utmost Hazard of his Life, and earnestly so forewarned) rather than endure the Agonies of it. Nor will it be adviseable to preach Patience and Resignation, where the Pain continues more than ordinary sharp, and we have any Room to suspect it proceeds from the Bandage; for though the Rigour and Violence may seemingly abate, it will not always be found owing to the Strength of Philosophy, but to a Mortification. Whence it appears, Security against a Flux should never be owing to strait Bandage; and when we suspect it to be so, we should give proper and immediate Relief.

Thirdly, A vicious Disposition, or ill Habit, no other-wise causes a Gangrene, than as it brings on an *Intemperies*, Tumor, Inflammation, &c. which at length may suffocate and corrupt the natural Heat. *Thirdly*, Ill Constitution.

Let what will be the Cause of a Mortification, or let it soon or late take Effect, the Cure or Recovery is the same; which that we may the better compass, we are to understand, that whatever has once mortify'd, must and will separate and cast off in Sloughs; so that when it is said such or such Means are proper with a Gangrene, it is not meant, that the Part so mortify'd, is recoverable by these Things, but only that they serve to prevent the farther spreading of the Putrefaction, and that they hasten the Separation of what is already dead: And these are internally Alexipharmicks. *Cure.*

℞ *Lap. Cont. Yerva*, ʒj. *Bezoar. Oriental.* ʒj. *Cochinel.* By Intergr. xij. divid. *Chartul. sex quarum una sumend. quarta nals. quaque Hora superbib. Cochl. ij. Julap seq;*

℞ *Aq. Epidem. Theriac. a.* ʒj. *Aq. Laëtis Cerasor. Nig.* a. ʒiij. *Syr. Caryoph.* ʒj. *Lap. de Goa. Conf. Alkermes* a. ʒs. *M. F. Julap.*

Or,

MORTIFICATION.

Or, instead of these, any other alexiterial Medicines, Variety whereof may be found in Mr. Fuller's *Pharmacop. Extemporan.* his *Pul. Contra Yerva Comp.* his *Pul. Pestilential.* *Pul. Alexiter.* *Bolus Cardiacus,* *Jalap. Idæi,* &c.

They help in this Case by resisting Putrefaction, and strengthening the Spirits against contagious Vapours.

By Externals.

Externally; in which lays the Surgeon's chief Address, a Cure will depend in making * our Bandage at all Dressings only *retentive* in the beginning Mortification, that so a free Recourse and Circulation of Blood, may not be impeded: In an unwearied Use of Fomentations, together with Frictions, Cataplasms, and warm Covering, to invite and cherish the Heat: And, *lastly*, in Scarifications, Lotions, and the actual Caution.

Fomentations must be continued for Hours together, if we expect any Benefit from it; and then the Incisions dressed warm, with Pledgets out of the following Lotion:

℞ Spt. Vini bene rectificat. & Camphorat. ℥iv. Spt. Sal. Armoniac. ℥ss. M.

Or, only *Ol. Terebinth.* warm.

If you bring the Limb to plump and swell again by these, there is Hopes of recovering it; if not, there is none.

Scarifying.

Sacrifications need not be made through the whole Discoloration; where the Part is not entirely destitute of Sense, lesser Means may prevail; but where it is, we need not spare, cut at small Distances, and to the Quick, how

* A Bandage is called so, where it answers no other End than keeping the Dressings on. For the like Reason, Verdué calls others, Uniting, Dividing, Expulsive, Incarnative, and Attractive, i. e. in several Hurts, I suppose they may be made to contribute towards those Intentions; and in some Cases, are Remedies of themselves. Sometimes the double Rowler is called Agglutinative. For the Head a Kirchief. For the lower Mandible a Sling with Four Heads. Creeping, is leaving a Space between every two Circumvolutions. When a Fourth Part is left uncover'd, he calls it Deloir; Others, Discremen Spica, &c. but without much Meaning.

how deep soever ; it makes Room for Medicines reaching where they can stimulate and excite, to thrust off the Cadaverous Flesh.

If a Flux of Blood should follow, it will be better stopping with actual Cautery than Dossils. These choak up, and probably increase the Evil ; but the other not only answers that Purpose of Astringency effectually, but also dries up the Putrefaction. If Tendons lay bare, burn and divide them through.

Actual Cautery is the last Refuge ; and is without all doubt the best Means can be used to resist Putrefaction : To make it answer our Hopes, we should apply it till its Effect reaches the quick Parts, and all the nasty foul *Sanies* bred from the cadaverous Flesh, is in a manner dry'd up ; then Nature immediately commences her Efforts for separating the Quick from the Dead ; which, she would contend for, with less Success, if the Cauterizing were done by Halves.

When we have used the Iron, we assist Nature's Endeavour's for a Separation, by scarifying through the Depth of the *Eschar*, i. e. till it bleeds, and dressing those Incisions with Lenients and Digestives ; use to the Whole Fomentations and Cataplasms, as before. If we fail of our End, after these Trials, I see nothing remains but the Operation again.

OBSERVATION I.

A Gangreen'd Arm from Intemperies.

Mrs. ELIZ. C—L,

A Woman aged Forty-seven, in the Spring of the Year, was suddenly seized with a darting raging Pain at the End of the Forefinger of the Right Hand ; nothing to be seen but a white Speck, no bigger than a Pin's Head ; yet at the End of two Days, by the Violence of it, was thrown into Delirium and Convulsions.

Slight Evils in bad Habits, are often of terrible Consequence.

I cut deep into the Side of the Finger, let it bleed well, and applied a warm Cataplasm of Bread and Milk : On which she appeared next Day pretty easy ; but the next after that, again the whole Finger was spread with little Vesicles, discharging thence, and at the Wound, a prodigious

MORTIFICATION.

digious Quantity of a thin nervous Liquor, which would wet a Cloth through ten double in an Hour's Time; and that as often as you would repeat the Tryal. This, and the Pain, convulsed her Night and Day in the Face, Body, and Limbs, alternately: Vesicles, Tumor, and Inflammation, quickly spread the other Fingers, the Hand and Arm; extending by the fifth Day (from her first Complaint) to the Elbow; the Hand growing livid and insensible, perhaps, hastened by a Purge or two, that I expected to have given Revulsion by; whereas in so extreme Pain and Fluxion of Humours, any Attempt of Remedy, but to the Part itself, is fruitless.

To prevent Extirpation, I scarify'd quickly through the whole Tumor, from the Elbow to the Fingers End, slashing deep and fearlessly where my Sight or Touch evidenced any Insensibility, used a strong Fomentation for an Hour, dressed the Scarifications with hot *Ol. Tereb.* and round the Whole, a thick and warm Cataplasm of *Farin. Avenac.* wrapping over this Flannel to keep the Whole as much as possible at a continual Warmth; for the Heat in these Cases, can never be too much; it may be bore off from the sensible Extremity with your Hand a Minute, if there is Fear of scalding; and in the Manner of Lodging and Covering, we may obviate any Prejudice from the Weight of Dressings.

Inwardly, I gave burnt Wines, Cardiacks, and Alexipharmicks.

I renewed the Fomentation and Cataplasm, in a warm Room, every eight Hours; and at three or four Dressings had the Pleasure to see the Gangrene checked, the Inflammation not so fiery red, &c.

At this Time her Stomach became very sick, rejecting every Thing she swallowed for twenty-four Hours, but had no Convulsions.

About the fifth or sixth Dressing we had a little Digestion upon our Cataplasm, which increased every Day afterwards, the Pain and Tumor proportionably abating. In a Month, the Sloughs were all separated, and the Patient just well; when I was fresh alarmed with a large painful Tumor in the Left *Axilla*: I opened it on the Acumination, and discharged by Virtue of our Cataplasm every Day abundance of the same thin Humor we had at the Finger, which in a few Days, with this warm Dressing,

MORTIFICATION.

157

sing, dispersed. After this, another of the same kind at her Left Breast; and broke out also in all Parts of her Body with virulent Pustules, venting the same Serosities; and then would dry and scale like a Leper. All which were removed as she recovered Strength, by some Mercurial Purges, and afterwards a Course of Mineral Waters.

N. B. This Patient had her Terms freely a Week *Remark.*

before the Pain in the Finger seized her, and after the Cure, or from that Time, never saw the least Sign of them again. From which I would thus reason: That the commencing and finishing of the Menstrual Flux are two remarkable Periods; and of so contrary Effect, as ought to have due Notice in a Woman's Life. The Alteration in her at Puberty is generally for the better; her Voice, her Complexion, and her Manners, are more sociable; even chronical Disorders contracted from the Womb, will leave her then, when all Medicines else have been unavailable: And, on the other Side, when this Flux is ceasing, she as generally suffers an Alteration for the worse: I mean not only in blooming Strength and Fertility, but they frequently, in their finishing, bring Pains and scirrhus Tumors upon the Stomach, or other Bowels, Dropsies, Tympanies, Consumptions, flushing red Faces, leprous Corruptions, Rheumatism, total or partial Pains and Lameness of the Limbs, Apostemations, Tumors, Gangreens, Cancers: The Meaning of which must be, that these Periodical Discharges are a Vent of Acrimony, as well as Redundancy of Humors; because we see every little Irregularity or Suppression of them destructive of Health; and when they totally cease, they discover this more remarkably, according to Pre-disposition; which, if weak or ill, the Period of Age, and sedentary voluptuous Life makes worse.

The Advice I would infer, is, That when the *Men-* *The Advice*
strua are about to cease, guessed at pretty well by the *from it.*
Time of Life Women are arrived at, their *Dodging*, as
they call it, (*i. e.* not appearing for eight, ten, or more
Weeks;

MORTIFICATION.

Weeks; and at other Times, coming three or four Weeks following or other Signs,) I say, it would be convenient at such Notice to cut an Issue in the Leg, purge now and then, and confine themselves to a more abstemious Living than they were accustomed: It might prevent an unhappy old Age, which perhaps many fall into for want of such Caution.

OBSERVATION II.

A Gangrened Leg from an ill Habit of Body.

Mr. G. JERMAN.

A Gentleman about fifty Years of Age, inclining to Corpulency, by a Fall from his Horse got a severe Bruise on his Leg; which was presently attended with great Pain, Inflammation, and Fluxion.

I saw him about a Week after the Hurt received, being then attended by two able Surgeons: *The Wound was black, insensible, foetid, and tumified*, to double the Bigness of the sound Limb.

We cut off the loose and cadaverous Sloughs with our Scissars, scarify'd about the Wound to the Quick, fomented and dressed with warm Spirits of Wine, a Cataplasm of the Seeds (boiled in half Wine, and half Water) round the Whole, and tied it up in a soft Pillow: These Dressings we renewed Morning and Evening, admitted him a Liberty of eating and drinking in a Way most agreeable to his Stomach, (especially burnt Wines,) gave every Night a Paregorick Draught, and in the Day procured a Stool with a Clyster.

We soon perceived an Alteration. In three or four Days the Skin broke in several Parts about his Leg; in others pealed, giving large Discharges thence, and from the Wound, of a well-concocted Matter; and from thence forward, with common Digestive and Incarnatives, the Leg was in a short Time gradually restor'd. But, Poor Gentleman! he survived to an unhapdy Purpose, shooting himself some Time after; rashly provok'd, its thought, by the Selfishness of his Patron; who had provided him a Place, but substracted the Salary for other Uses.

The

MORTIFICATION.

159

The Remarks I would make from the preceding Example are these :

First, That Contusions of the inferior Limbs (according to Corpulency and Age) have generally a worse Tendency and Prognostick than the contrary : And, why ? Their Fibres are lax and weaker, less able to combat with the Injury of the Part, which still more promotes the Fluxion by its Dependency.

Secondly, That in Dispositions where this due Heat and Springyness of the Blood and Muscles are abated, the Humours are apter to stagnate, ferment, and putrify, and that with a more protracted Pain than in more youthful Subjects.

Thirdly, When upon such Accidents, Pain, Inflammation, and Fluxion, follow soon, and increase fast, we may conclude the Tumor not capable of Revulsion in those weakened Habits, and should immediately seek for Remedy at the Part affected. To check an approaching or begun Gangrene, and alleviate Pain by quickly bringing it to Maturation with warm emollient Dressings ; externally, by Cataplasms and good Covering ; internally, by generous Drinks and Cordials, that will circulate and warm the Blood for so benign a Transmutation.





VIII. Miscellaneous OBSERVATIONS on other WOUNDS.

HAVING gone through a general Process of Wounds, occasionally under the Heads of *Compound Fractures, Amputations, and Gun-Shot*; I shall add some short Instructions upon others.

Definition. A Wound being the Solution of Continuity, *inside or out*, they require some new Skill in respect to the Part hurt; the manner how, and with what, and whether by Puncture or Incision; Cures having all a little Variation, according to such Circumstances.

First, To know in the Limbs, whether the Wound be among Tendons, Nerves, or Blood Vessels; and if Internal, what Bowel is hurt; the Symptoms and Indications.

How to judge of a Tendon being touched.

To judge of a Nerve or Tendon's being wounded, you consider the Place, whether nigh a Joint or no; for it is the Head or Tail at the Origine and Insertion, that chiefly produces the Symptoms; *sudden violent Pain, immediately followed with Inflammation, Contraction, and great Defluxion; that gleet and difficultly maturate*; worse by Puncture than Incision, in a cachochymious than a good Habit.

With the Remedy.

I find Authors recommending to those Wounds, Medicines of hot and subtle Parts, *Ol. Tereb. Ol. Rutæ. Sabinæ. Bals. Sulph. Bals. Terebinth.* to consume the Ichorous Humour issuing from them. *Ol. Tereb.* has the Preference, of most noted Use, and will be better in my Opinion, if mixed with an equal Part of *Basilicon.* and applied very warm, with Down Lint. To this add, a soft oily Embrocation about the Limb; *the Cataplasma communis Avenac.* retentive Bandage only, and above all the easiest Position: that the Part be stirred as little (if possible) as a Fracture; because much Pain incites Fever

and

and lessens the Strength. If the Puncture is found to gape, grow hot, &c. a little Ventilation by Bleeding, or Glisters, may do good. It is the Ease that you can give the Part, either by internal Administration, or outward Application, from whence you are to expect Success. If the Symptoms still exaggerate, with Convulsions, and a Mortification threatens the Life; all agree the less Evil of dividing the Tendon is eligible; * the Wound then comes under the general Consideration, cures without uncommon Difficulty, but the Limb will have more or less Lameness and Stupor, according to the Importance of the Tendon.

Mr. Young, an ingenious Surgeon, cited before, recommends *Ol. Tereb.* as an incomparable Balsam in these Cases; and mentions a Patient that had the Tendon pricked by *V. S.* wherein he found nothing so serviceable; first applied hot with a little *Spt. Vini.* afterwards changed for *Basilicon.* A Fomentation, Cerate round the Arm, Glisters and Hypnoticks.

A Woman, says the Example, who had a Tendon *A pricked* pricked in *V. Section*, came under my Care, and being *Tendon.* replete with ill Juices under intolerable Pain, Contraction and Tumor seizing the Part with Faintness, increasing every Day with Inflammation and Tendency to Convulsions, I bled her, dilated the Orifice, and poured into the Wound equal parts of *Spt. Vini.* and *Ol. Tereb.* very hot, Embrocating the Member with this Liniment.

Ol. Rosar. Catellor. a ʒj. Bals. Galban. ʒss. and wrapped the Whole in Linnen, dipped in *Posca.* A sharp Glisten also, and the following Julaps and Powders.

R

* I have had the Tendon Achilleis under Cure, when slightly, and when quite divided, both by Bullet, and by a Scythe; and not any extraordinary Accident, or even Lameness follow the Cure. The Tendon, what Part of it is to rot and come away, requires indeed a longer Time, and an assiduous Fomenting, to bring away in Sloughs, that will be a long while separating, but once obtained, an Incarnation succeeds; the throwing off that in Time, becomes tendinous, in the same manner as the extravasated Juice from the Ends of a broken Bone, becomes Osseous, and repairs the Strength of it.

℞ *Aq. Cerasor. Nig.* ℥vi. *Bryon & Pæon. com. Syr.*
Artemis. a. ℥i℥. *Tinct. Succin. Cassor. a* 3j. *M.*
 ℞ *Pul. Guttet. S. M.* 3j. *Margarit. ppt. Sal. Succin. a.*
℥j. M. F. Chartulas quatuor una quarta quaque hora
sumend. haustulo prædicti Julap.

But before these were given, the Symptoms that had come on more vehemently, threw her into Convulsions.

I repeated the Glister, embrocated as before, scarifying the fore part of the Arm, baring the Tendon an Inch, but not dividing it. A thin Blood flowing thence, the quantity of a Pound, pouring in often hot *Spt. Vini.* and *Ol. Tereb.* bathing the Member with a strong Fomentation for half an Hour, and being ready to perish for want of Sleep, gave a slight Hypnotic after an Enema.

She slept all this Night, the Ardor, Thirst and Convulsions leaving her only a Debility of the Part and Intumescence of the Tendon, I fomented as before, dressed the Puncture with *Basilicon.* acuated with *Ol. Tereb.* encompassing the Member with a cerate of *Diapalm. sicc.* *Paracels.* & *Cera Cetrin. a. p. æ.* . . . From this time she mended apace.

To relax the contracted Tendon, I used to direct the Arm as she amended, to be put in the reeking Viscera of Beefs. Used the following Liniment.

℞ *U. Nervin. Martiat. Ol. Palmæ. Catell. Caster. a.*
3j. Bals. Galban. 3iij. Succin. 3j. M.

Concluding with a Purgings, of *Pil. Succin. Tartar. Querceten. ℥j. reg. Jalap. gr. viij. and Bals. peruv. F. Pil 7. deaurand.*

From what I have met of this kind in my own Practice, I must take leave, though he was an ingenious Gentleman, to find fault with his Mixture of *Spt. Vini.* and *Ol. Tereb.* they are too irritating in these Cases, and probably hastened on the Convulsions he complains of. The Mixture with *Basilicon,* and dressed warm with a softning Cataplasim, Cerate and Hypnoticks were certainly the Foundation of Cure; though Mr. *Wiseman* condemns this very *Ol. Tereb.* hot, (p. 359,) and so it probably may

may deserve when too hot or alone, the Success here laying in those Means that best conduce to quiet the Orgasm of the Part; when that cannot be done, Fluxion, Inflammation, and Convulsion encreasing, the Tendon must be divided. If the Accident be in a Finger or Toe extirpate in time.

Painful Corns, Fractures, Felons, Thorns, or Splints, running deep into the Ends of the Fingers, (under or on the Sides of the Nails) will often by their acute Pain, bring on sudden great Inflammation and Fluxion; sometimes rot the Bone without any Sign of a Mortification outwardly.

I have frequently on all these Occasions, taken off the Joints of Fingers and Toes, done at one Stroke with the Chissel, in the Joint of the second or third Phalanx, because less apt to splinter; and if there be a Caries stops there. Dressings after the first for stopping the Blood with warm *Ol. Tereb.* left on 24 or 36 Hours, must be Lint Pledgets out of a warm Digestive, a little thick cross Cloth, a Rowler to keep it on, and a Flannel Cap over all; especially in cold Weather, to keep the Stump warm: The Wound that would never digest under that acuteness of Pain attending these Accidents under ill Habits, (and points out Malignancy,) quickly digests with this Alteration, and the Symptoms are relieved.

I have drawn away the Bone of the third Phalanx of the Finger, when bare, corrupted and loose, after these Accidents join'd perhaps to an ill Treatment; and seeing no Sign of a Mortification in the Wound, healed it up, finding the Finger afterwards of more use, with such a Fungus, than if a Part had been extirpated.

Wounds of the Veins or Arteries, are known, the former *Wounds of* by a smooth dusky Stream, the Blood moving from a *the Blood* narrow, to a wider Channel; the latter by an impetuous *Vessels.* Torrent, being florid and streaming out *per Saltum*, moving from a greater, to a straiter Channel. The Flux may be stopped by a Deligation, or a cauterizing of the Vessel; and Authors, even in small Wounds of *Veins and Arteries*, have given the Preference to Cautery. As to my own Practice, I never found either of them wanting, and I have had many under my Care, especially of the *Carpul Artery*. If it be an incised Wound, (and

Loss of Substance does not forbid) * Stitching is the Astringent, to choak the Blood upon the Vessel; the making them at an Inch distance, and tied down close and firm, answers like a Stiptick, 'helped securely by the Astringent Application and Bandage that follow. If the Flux hinders, an Assistant must make a Gripe above, while its performing.

*Stitching
of Wounds.*

Wounds superficial or short, need no Stitching; and when large, the Design of them is Stipticity. The Hopes that they will sooner heal, or the Cure be facilitated by them is a Mistake. I never stitched any of these large incised Wounds, *secundum longitudinem aut transversum*: but I found myself obliged in two or three Days, by the Tumor and Inflammation, to cut them out again; sooner indeed in the last than the first sort; the Maturation pent in, and the Uneasiness of the Patient, pointing out that Nature would prevent me if I let it alone a Week. But supposing Stitches could be kept in longer, that will not prevent the Wound's gaping in the same manner, when they at last do come out. Mr. Turner p. 494, gives us the History of a Patient from *Woolwich*, where the Artery of the Arm was punctured by a Sword, run in at the *Biceps*, and out at the *Deltoides* Muscles; where the bleeding had been stopped, by the cramming in of Tents and Dossils; which had produced (when the Patient came into his Hands) exceeding Pain, large Tumor, Fever and Inquietude, justly imputed to the Method had been used with him. And 499, calls it dangerous and injudicious; for what does a Surgeon propose by this Spiggoting of a Wound, but choaking up the bleeding Artery, answered in a much safer and easier Way *ut supra*; only in Punctured Arteries, I would thrust in a moderate

* Stitching in these Wounds are properly called Astringent or Suppressio, because they answer that End; are made at an Inch distance with double Silk close ty'd. The Lips are advised to meet even; very unnecessary, because it's more difficult to do otherwise.

Dry Stitching succeeds this, (or is used alone in the Face, as making the least Scar.) Its done by applying a very sticking Gum or Plaister, spread on Leather close to the Lips of the Wound, and taking Stitches through them.

℞ Colophon. picis navalis Cerae a ʒij. Tereb. ʒij. Massich Thuris. Farina Vol. Calcis viv. a ʒij, Fiat Emplastrum.

Conserving, is leaving the Needles in, and twisting the Silk about them.

moderate Doffil, arm'd with Stiptick, proportion'd to the Weapon that wounded; because Bandage does not bring the divided fleshy Fibres to meet so close as where there are Stitches.

If the Gripe does not hinder the effusion of Blood while you are dressing, make use of the Turniket for that time, as in Amputations; and do not let it go again presently, but secure your Patient in Bed, the Limb in a Position agreeable to him, and then gradually slacken, while you keep your Hand pressed upon the Wound, to supply that Stricture; relieving with Assistants for Hours, nay, a whole Day, if apprehensive of a fresh Hæmorrhage, (which a Surgeon ought to be where the Arteries are large.) A greater Artery opened will be sooner mortal than a lesser, yet with less Quantity of Blood spilt. The *Aorta* than any other; for when the Fountain is emptied, whence all the other Rivulets are derived, they must necessarily stop. The *Cava* and *Porta* are mortal immediately. The *Crural* or *Axillary* in a few Pulsations, without Help is near; far sooner than the carpal or sural Branches; because the Circulation stopp'd, the *Aorta* becomes instantly empty'd, and no way of Supply.

A *Ligature*, especially when the Artery is wounded by *Ligature Puncture*, is to me talking idly, (p. 537, and 540 of *of an Artery* Turner) for high up, where it more importunately demands, as being larger and more dangerous; how and where will you cut and come to it? and how deligate when you do? It is not like an Amputation, that admits passing a Needle securely round the Vessel; but could it be done easily, the actual Cautery is far preferable.

All Gun-shot, lacerated and incised Wounds, may be said to be Wounds of the Veins, Arteries, Nerves and Tendons; their being in all of them a Solution small or great, of their Ramifications; and which have been fully considered under the Head of *Compound Fractures*, or of *Amputations*. What I mean peculiarly by Veins and Arteries, are their being opened by Puncture of Sword, or other sharp Instrument; the Flux then, especially of the Artery requiring a new Intention to stop *ut supra*.

The Flux stopped, it is convenient to revulse by *V. S.* to give the Limb an easy Position; not to dress it for two or three Days, and to keep a Patient cool, quiet, and abstemious. If an Artery be touched in Bleeding, let it

Loss of Substance does not forbid) * Stitching is the Astringent, to choak the Blood upon the Vessel; the making them at an Inch distance, and tied down close and firm, answers like a Stiptick, 'helped securely by the Astringent Application and Bandage that follow. If the Flux hinders, an Assistant must make a Gripe above, while its performing.

*Stitching
of Wounds.*

Wounds superficial or short, need no Stitching; and when large, the Design of them is Stipticity. The Hopes that they will sooner heal, or the Cure be facilitated by them is a Mistake. I never stitched any of these large incised Wounds, *secundum longitudinem aut transversum*: but I found myself obliged in two or three Days, by the Tumor and Inflammation, to cut them out again; sooner indeed in the last than the first sort; the Maturation pent in, and the Uneasiness of the Patient, pointing out that Nature would prevent me if I let it alone a Week. But supposing Stitches could be kept in longer, that will not prevent the Wound's gaping in the same manner, when they at last do come out. Mr. Turner p. 494, gives us the History of a Patient from *Woolwich*, where the Artery of the Arm was punctured by a Sword, run in at the *Biceps*, and out at the *Deltoides* Muscles; where the bleeding had been stopped, by the cramming in of Tents and Dossils; which had produced (when the Patient came into his Hands) exceeding Pain, large Tumor, Fever and Inquietude, justly imputed to the Method had been used with him. And 499, calls it dangerous and injudicious; for what does a Surgeon propose by this Spiggoting of a Wound, but choaking up the bleeding Artery, answered in a much safer and easier Way *ut supra*; only in Punctured Arteries, I would thrust in a moderate

* Stitching in these Wounds are properly called Astringent or Suppressio, because they answer that End; are made at an Inch distance with double Silk close ty'd. The Lips are advised to meet even; very unnecessary, because it's more difficult to do otherwise.

Dry Stitching succeeds this, (or is used alone in the Face, as making the least Scar.) Its done by applying a very sticking Gum or Plaister, spread on Leather close to the Lips of the Wound, and taking Stitches through them.

℞ Colophon. picis navalis Cerae a ʒij. Tereb. ʒij. Massich Thuris. Farina Vol. Calcis viv. a ʒij, Fiat Emplastrum.

Conserving, is leaving the Needles in, and twisting the Silk about them.

moderate Doffil, arm'd with Stiptick, proportion'd to the Weapon that wounded; because Bandage does not bring the divided fleshy Fibres to meet so close as where there are Stitches.

If the Gripe does not hinder the effusion of Blood while you are dressing, make use of the Turniket for that time, as in Amputations; and do not let it go again presently, but secure your Patient in Bed, the Limb in a Position agreeable to him, and then gradually slacken, while you keep your Hand pressed upon the Wound, to supply that Stricture; relieving with Assistants for Hours, nay, a whole Day, if apprehensive of a fresh Hæmorrhage, (which a Surgeon ought to be where the Arteries are large.) A greater Artery opened will be sooner mortal than a lesser, yet with less Quantity of Blood spilt. The *Aorta* than any other; for when the Fountain is emptied, whence all the other Rivulets are derived, they must necessarily stop. The *Cava* and *Porta* are mortal immediately. The *Crural* or *Axillary* in a few Pulsations, without Help is near; far sooner than the carpal or sural Branches; because the Circulation stopp'd, the *Aorta* becomes instantly empty'd, and no way of Supply.

A *Ligature*, especially when the Artery is wounded by *Ligature* Puncture, is to me talking idly, (p. 537, and 540 of *of an Ar-Turner*) for high up, where it more importunately de-*tery*. mands, as being larger and more dangerous; how and where will you cut and come to it? and how deligate when you do? It is not like an Amputation, that admits passing a Needle securely round the Vessel; but could it be done easily, the actual Cautery is far preferable.

All Gun-shot, lacerated and incised Wounds, may be said to be Wounds of the Veins, Arteries, Nerves and Tendons; their being in all of them a Solution small or great, of their Ramifications; and which have been fully considered under the Head of *Compound Fractures*, or of *Amputations*. What I mean peculiarly by Veins and Arteries, are their being opened by Puncture of Sword, or other sharp Instrument; the Flux then, especially of the Artery requiring a new Intention to stop *ut supra*.

The Flux stopped, it is convenient to revulse by *V. S.* to give the Limb an easy Position; not to dress it for two or three Days, and to keep a Patient cool, quiet, and abstemious. If an Artery be touched in Bleeding, let it

run till Fainting (20 Ounces perhaps;) and without discovering your Apprehensions, choak the Orifice with Lint, rowling a thick square Compress upon the Artery tort, with Advice to keep the Limb still three or four Days, and the Coat will unite as in Arteriotomy. I have met with this Accident myself, and under such Precaution found no ill Effect, nor the Person any mistrust; the Circumstance of such an Impetuosity, reconciling him to any thing I did for Security against bleeding again.

If through neglect this Accident should become an Aneurism, the Tumor will be continually increasing, and requires an attempt of Deligation; an Operation I never saw, nor know how its done, but once was brought to a Swelling from this neglected Accident (as the Patient told me;) that after many Ebbs and Floods for two Years, became as big round as a two Quart Bottle, filling all the Interstices of the Muscles, above and below the Elbow; not only growing a useless Incumbrance to the Man at last, but was troublesome to the other Hand, wanted continually to move it out of the way; I advised, and was concerned in the Amputation.

Punctured Wounds.

Punctured Wounds, by Knife, Rapier, or other Instrument, not penetrating; I think, should never after the first Dressing that the Hæmorrhage is stopped, have a Tent above three Quarters of an Inch long, though the Wound be much deeper; since that imbibing the warm Digestive, instills it sufficiently to mix with the Blood quite to the bottom; and brings on easier and quicker Maturation, than hard and long Tents, that give Pain and hinder.

Penetrating Wounds.

Penetrating Wounds of the *Thorax* or *Abdomen*, are always very dangerous, the Parts contained, being more necessary to Life, than those of Limbs, and hid; heightening and aggravating with peculiar Symptoms: Yet to me, Cures of this Kind, when they now and then happen, such as a Thrust to, or through either Cavity, are magnified beyond others undeservedly; the Wonder being more especially the work of Nature, and rarer than those of the muscular Parts. The external Orifices, which is the Surgeons Business, can be dressed to little Advantage for the internal Wound. To use Injections, as some have prescribed, of Vulnerary Herbs boiled

boiled in Red Wine, to which Syrup of Roses is added, must be wrong ; till we know how such Liquid may be imbibed, and expelled the Cavity again ; and for internal Prescription, whether Physical or Diatætical, they are by Nature made healing, in a way inconceivable to us ; and therefore whatever is innocent, is equally good, with only a Preference to what a Patient may like, or has been used to. Tea and Honey is a better Pectoral, when more agreeable to the Taste and Habit, than more compounded Decoctions, Electuaries, or Traumaticks. *Paulo deterior & Cibus & Potus jucundior autem eligendus potius, quam meliores quidem sed ingratiore.* (Hipp.)

Signs.

The Signs by which we collect what Bowel is hurt ; are from the Postures he that gave, and he that receives a Wound were in, a little also to the Instrument, from the part of the Body penetrated, and the Symptoms following, (when Death is not the immediate Issue.) To a Wound in the Lungs, succeeds a Cough, difficulty of breathing, a spitting of frothy Blood, and the Wind comes with Noise, waving a Feather or Flame of a Candle. The Circumscription of the Thorax, also tells us, when the Lungs, or any of its contained Parts are wounded, reaching from the Basis of the Neck, to the *Diaphragma*, (a Partition between the Cavities,) arising before from the lower Part of the *Sternum*, and ends of the small Ribs, behind from the upper *Vertebra* of the Loins. It is better if one Lobe only be wounded.

The *Diaphragma* hurt, is convulsed upward, the Spine affected, bad Breathing, Hiccough, Hoarseness, and Pain about the small Ribs, from its Semi-circular Origination thence.

The *Spinalis medulla* hurt, comes Palsey.

The *Liver* wounded superficially, that whole Region draws inwards to the Back, endeavouring as it were, to fix them from the Pain their Motion causes. This Pungency extends by means of it's Connexion and Sympathy of Parts as far as the Neck. Blood comes by Vomit and Stool, Faintings, Fever, and Looseness. When the Wound is deeper, the Symptoms will be increased, and almost the same from the *Spleen* hurt, only on the Left Side. There are Authors who mention Cures here, but their Veracity in this Respect is doubtful.

Diagnostic
and Prog-
nostic.

The *Stomach* wounded, follows bilious Vomiting and Hiccoughs, rejecting every thing swallowed immediately, Convulsions and cold Sweats soon ending their Misery; though here also, Authors have cited Cures. *Daniel Swaben* a *Polish* Surgeon, in 1635, cut a Knife out of the *Stomach* of a *Rustic*, ten Fingers Breadth in Length, seven and twenty Days after it had been swallowed—and there are several others related equally strange. (*Turner* p. 457. on Wounds of the *Stomach*) Here we want again the *Spanish* Balsam, and a *Magnetic. Empl.* that had a considerable share in the Cure.

The *small Intestines*, have acute Pain, bilious Vomiting, Chyle discharged by the Wound, and into the Cavity of the *Abdomen*, while they live and have any made.

In the *large Intestines*, the Symptoms are less violent, and Excrement instead of Chyle discharged. Here *Gastrography* is recommended, rarely tried and of rarer Success, the *Glovers* Stitch increasing the Symptoms; what of this Kind has succeeded, must have been such as were stitched and united in one Orifice with the outward Integuments, mentioned hereafter in *Mr. Cheselden's* Patient, that lost 26 Inches of Gut.

A *Kidney* wounded, Pain will extend thence to the Groin and Testicles; difficult and bloody Urine—*Ureters* much the same, only the Discharge is more into the *Abdomen*, where it putrefies.

Mr. Charles Barnard has transferred from the Transactions of the *Royal Society*; a very wonderful Operation and Cure, performed on *Mr. Hobson*, the *English* Consul at *Venice*, who was cut upon the Region of the *Kidneys*, by *Marchetti*, who at the second time, extracted thence two or three small Stones; and while the Wound was open, another as big as a Date Stone came away; he becoming afterwards extremely hearty and well, only the Wound fistulous. (*Turner* p. 491.)

Bladder, Pain about the Pubes, Suppression and bloody Urine, bilious Vomiting and Hiccough, Wounds at the Neck, or fleshy Part of this Viscera are found cureable, from the Solution it undergoes in *Lithotomy*, but in the membranous Parts more fatal. *Plaga vesicæ inflicta, Insanabilis & Mortifera* (*Hipp.*)

Turner has a Case cited (p. 501.) from *Mr. Proby*, Surgeon at *Dublin*, who 1694, by the same Operation as for

for the Stone, extracted a Bodkin four Inches long, out of the Bladder of a Woman, that day nine weeks she swallowed it.

Internal Hæmorrhage, is attended with Heat, Thirst, Anxiety, uneasy Respirations, Faintings.

When these Symptoms, peculiar to each Viscera are wanted in Wounds; it is a pleasure to inform a Patient that they have not penetrated.

With these Signs and considering the Part, we may form a Judgment which of the *Viscera* are hurt. The uppermost Division of the *Abdomen*, the *Epigastrium* comes from the *Cartilago ensiformis* to within two Fingers Breadth of the Navel; the right *Hypocondrium* having most of the Liver; the Left, the Spleen, part of the Stomach and *Colon*.

The *regio umbilicalis*, is two Fingers above and two below the Navel. In this Region, if the Wound be forward the *Jejunum* or *Ileum* is hurt, its Sides are called *Epicolicæ*, from having the Gut *Colon* running under: Under the Right also, but deeper on the Loins, is situated the right Kidney, and part of the *Jejunum*, and so again in the left.

The *Hypogastrium* or lowest Region, is from hence to the lower Part of the *Os Pubis*; covers the Bladder, Womb, and *Rectum*.

In all these Wounds, especially the Penetrating; tho' *Simplers* have given each peculiar Herbs, their Cure when any Hopes remain, lays in one general Design; and that is, procering an easy languid Circulation: Whatever excites Uneasiness, (stirring or Medicine) puts the Blood in quicker Motion, irritates and does hurt.

The less the Bowels labour in their several Offices by a Subtraction of Meat and Drink, provided there is enough taken in to sustain Life, the better in these Cases goes on the Work of healing, indicated by the nauseating of a Patient, and may be proportioned by that: The Parade of many internal Medicines bring more Reputation to the Physician, than Service to the Patient when he does well.

To compass this, the best we can, is to observe an exact Regimen, large Bleeding, a quiet soft Position in Bed, a warm Air, keeping the Body soluble with Clysters,

WOUNDS.

Clysters or Suppositories; Hypnoticks now and then; Vulnerary Decoctions, and Diet of Vegetables. Externally may be required, Fomentations, Embrocations, Cataplasms; and as Danger abates, Terebinthinates and Balsamicks.

VULNERARIA.

<i>Acetosella</i>	<i>Gerrista</i>	<i>Dactilæ</i>
<i>Agrimonia</i>	<i>Hyssop</i>	<i>Viperæ</i>
<i>Brassicæ</i>	<i>Borage</i>	<i>Limaces</i>
<i>Hederaterres</i>	<i>Bigloss</i>	<i>Lacti</i>
<i>Hyperic.</i>	<i>Endiv.</i>	<i>Cort. Ulmi</i>
<i>Pulminar.</i>	<i>Porri</i>	<i>Salviæ</i>
<i>Brooklime</i>	<i>Sambuc.</i>	<i>Menth.</i>
<i>Smallage</i>	<i>Fiei</i>	<i>Petroschin</i>
<i>Cochlear.</i>	<i>Passulæ</i>	<i>Alehoof.</i>

Some or other of these, may be made into Teas or Decoctions, adding a little White-Wine for common Drink. Mr. *Wiseman* advises some of them in Broth, (p. 347.) with Eggs and Jellies.

BALSAMICA.

<i>Tea</i>	<i>Eryngium</i>	<i>Terebinth.</i>
<i>Chocolate</i>	<i>Ammoniac</i>	<i>Sper. Cæti.</i>
<i>Nuces Pistach.</i>	<i>Glycirriza</i>	<i>Lupuli.</i>
<i>Pastinaca</i>	<i>Cinnabar nativ.</i>	<i>Bals. Tolu</i>
<i>Cæpæ</i>	<i>Hordeum</i>	<i>Benzoin</i>
<i>Lap. Hibernic.</i>	<i>Bals. Peru</i>	<i>Sulphur</i>
<i>Amygdalæ</i>	<i>Bals. Capiv.</i>	<i>G. Junip.</i>
<i>Cynosbita</i>		

In the Course of these Cures if any inward *Hæmorrhage* is apprehended, a Fever attending, or Sweats, there is no better Medicine than the *Bark Æj.* in a Bolus with *Syr. e Mecon.* and repeated every 4 or 6 Hours.

I could here give several Examples of these Wounds, but as I study the ease of the Reader, and know he may be amply furnished with Histories of this Kind I omit, and only lay down the general Doctrine that I have

have govern'd myself by ; wherein with some I have been successful, and others not.

There is another Wound, we may sometimes be forced upon, and that is cutting out a Stone from the *Urethra* ; were it to come forward to the Glands, it might possibly be broke and mouldred away with a *Forceps* ; but to big too pass must be cut out. The Patient's Complaint, and your own Feeling having sufficiently convinced of a Stone being there, make it prominent by holding it between your Thumb and Finger of the Left-hand, while with the Right you cut upon it a Length proportioned to the Bigness, and thrust it out ; dress the Wound with Digestive or Venice-turpentine warmed ; over the first Pledgit, put a second and thicker, armed with the same, kept on with a retentive Bandage, this hinders the Urine ouzing too much this Way, a little it will for a few Days, but the Channel not being straitened, will always naturally void the far greatest Quantity, till the Wound closing in a Week or ten Days, derives the whole as usual : I have twice met with this Accident in Practice, and without a *Canula* or any other Method than above, healed the Wound without the least ill Symptoms.

Mr. *Moyle*, an experienced Navy Surgeon, tells us, *Wound of the Gula.* Wounds through the *Gula* or *OEsophages*, or of the *Aspera Arteria*, if not transverse, and at the same time large, are cureable.

He instances in a Pistol-shot through the *Gula*, that he cured with the Application of Turpentine and the White of an Egg beat together, spread and applied with fit Compress, and Bandage diligently looked after, that it sit close and unmoved for three or four Days.

The Gargles he joins with this Stilness, does to me not seem so proper, rather a forcing open the Wound. I never saw this Case, but think the keeping a Patient as much as possible from Drink and Gargles, and the Food of Consistency and easy Deglutition, till the Wound united, would be a better Method.

Authors on this Subject of Penetrating Wounds, speak as follows,

First, To the peculiar Symptoms, a probable Conjecture may be made, of what containing Part is wounded, from the nature of the Instrument ; the Stain, the Blood

or

or *Halitus* of the Body has left on it ; and above all, the Force and Posture (if a Duel, or Rencounter,) the Hero and his Mate were in, at the giving and receiving ; for a Sword or Stiletto may pass so astant ; up or downwards by the Position, as to wound containing Parts, very remote from the external Orifice ; and in such a manner, that eight or ten Inches thrust, shall be less fatal (now and then) than two or three. When direct, *Turner* lays down a sort of nautical Compass for the Navel, making every *Rhomb*, with the containing Parts underneath.

Second, Those of least danger, and which we sometimes see do well, are of the Caul, and large Intestines, and then with better Hopes in a small Puncture then ripped, and wide of the *Linea Alba* ; which being a tendinous Expansion of the Abdominal Muscles, gives more Pain. When the *Peritonæum* only is perforated, without any of the contained Parts hurt, in the *Suture* it must be taken up with the muscular Fat and Skin ; and if the Wound be longitudinal, at the lower Stitch a Tent may be introduced, armed with soft Digestive, and tied with a Thread. The principal Intentions of Cure are much the same in all.

Third, If the *Omentum* comes out at the Wound, (known from the Fat by its uneven Surface,) and is not soon replaced while warm and moist, but grown cold, dry, and mortify'd, all such corrupt Part must be cut off, making first a Ligature on the sound, with a waxed Thread to hang out of the Body ; returning gently back, the Maturation after a time extruding both.

Fourth, The Intestines also soon changes when exposed, requiring an expeditious return. If the Perforation be small, 'tis better left to Providence, with common Applications, without a *Suture* ; for where the *Suture* is said to be absolutely necessary, and safely undertaken, which can only be in the large Intestines ; these frequent Wounds of the Needle in the Glover's Stitch, generally irritate, and bring on great Pain, Inflammation, Convulsion, Cancer, and Mortification. See the *Gastrography* of *Turner*, Vol. I. And Mr *Sharp*, in Doctor *James's* *Physi. Dict.* (Article *Abdomen*.) To which the latter adds against the Operation. " That since when
" a Patient survives, the *Suture* does not hinder, but
" that

" that the Gut will conglutinate to the inner Membrane
 " of the *Peritonæum*, Caul or other Intestine; the new
 " Method established is better, of passing a fine Needle,
 " with a waxed Thread through the Middle of the
 " wounded Part of the Intestine, and after fastening with
 " a Knot, fix it to the internal Part of the Wound,
 " with the Thread out; Glutinous Plaisters to this, and
 " closing the Wound by *Suture*, makes the Intestine can
 " neither slip back, nor dry its Contents into the
 " Cavity; fastening and growing to the inside of the
 " Belly.

" This Gentleman cites two or three surprizing *Remark-*
 " Relations. The first is, from Mr. *Chefelden*, of *able Cases.*
 " *Margaret White*, who, ruptured at the Navel, after a
 " fit of the Cholick, mortify'd; and vomiting follow-
 " ing, burst. Mr. *Chefelden* found her with about six
 " and twenty Inches of the Gut hanging out and mor-
 " tify'd. He took away what was mortify'd, and left
 " the End of the sound Gut hanging out at the Naval,
 " to which it afterwards adhered. She recovered and
 " lived many Years; voiding the Excrement through
 " the Intestines at the Navel, sitting up every Day."

What I should long to know in this Case, is, of what
 Use the Intestinal Tube downwards was of afterwards?
 Whether subject to any Pain? A Relaxation, or Piles at
 the *Anus*? and whether a Person could not as well live
 with so much of the Intestines out of the Body as was
 here below the Wound? why cut off from its natural
 Use, it does not perish?

" The second was of an Inn-keeper, who on an
 " Abscess on the Right Side below the Navel, dis-
 " charged Excrement mixed with *Pus*, which con-
 " vinced the Surgeon of the Intestine being perfo-
 " rated, and without any other regard than to a common
 " Wound, ended in an Ulcer that discharged every
 " Day some Excrement, that put him to the inconve-
 " niency of Cloths to receive it, and breaking wind
 " there involuntarily for want of a Sphincter, but lived
 " many Years after in full Health.

" A third was a Boy of 15, that Dr. *James* attended
 " himself, 1720, who had been wasting a long while
 " with a pain on the right Side the Belly, and died
 " about 14 Days after his first visit, On opening the
 " Body

“ Body considerably swell’d, a *Flatus* was discharged,
 “ and stunk almost insupportably. The *Cæcum* was en-
 “ larged to a kind of bag like the Stomach, perforated
 “ as large as a Sixpence, and a hard Substance the size of
 “ a Tennis Ball upon it. He opened the Intestine and
 “ took out that hard Body; which upon cutting through,
 “ he found formed of the grosser Part of the Excrement,
 “ concreted round a Plumb Stone which lay in the
 “ Middle. He took eight more of the same Sort, but
 “ not so big, out of the *Colon*, and a great Number of
 “ lesser thence; and from the small Intestines, each of
 “ which had for its Basis, a Plumb or a Cherry Stone;
 “ some Excrement was found in the Cavity.

“ A fourth is from *Hildanus*, who only relates it
 “ however from a corresponding Physician of great Re-
 “ pute; of a blunt Knife forcibly thrust down a Fellow’s
 “ Mouth, that after two Years lodging in the Body,
 “ came out at an Abscess in the Groin; also a Point of
 “ a Sword by Stool, a Twelvemonth after wounded.”

Fourthly, the peculiar Difficulties encountered in pene-
 trating Wounds of the *Abdomen*, are perpetual Respira-
 tion, Peristaltic Motion, straining to Stool, Air let in
 at the Wound, and Blood or Matter dropping thence into
 the Cavity, all which must give a Disturbance to the
 Healing; a removing of which are,

Fifthly, Some of the Intentions of Cure. All agree that
 plentiful Bleeding, Rest, and Abstinence from every Thing
 almost but Broths, or what else will make a laxative
Fæces, are the properest Means; with these Wounds,
 Glysters frequently should help the Stools if necessary,
 though not altogether approved in Perforations of the
 Great Intestines, the Liquor going into the Cavity.

The first Dressings should not be removed in three Days,
 and afterwards no oftner (unless some very particular
 Accident calls) than once in twenty-four Hours; using
 two or three warm Stupes. An emollient Ointment to
 the Abdominal Muscles. A Swathe, bearing the Patient
 (if it consists with the same ease) towards the Wound in a
 soft Pillow, for the more convenient discharge of Im-
 purities; and lastly, keeping him to Vulnerary Drinks;
 Ease and a slow Circulation, as I have observed, being
 here of the greatest Benefit, and seems intimated by the
 Abdo

WOUNDS.

175

Abdominal Muscles being so impaired in these Wounds, as very much to retard the Circulation towards the *Porta*.

The Swathe is to keep warm, and support chiefly against the Accidents of Coughing, Sneezing, and danger of breaking the Stitches (when any) in straining at Stool. For the former may be used *Linctus's & Syr. e Meconio*. Against Sneezing, warm Milk snuffed up.





IX. AMBUSTIONIBUS.

IN Scalds or Burns, the Intentions of Cure are, alleviating the painful Sense of the *Cutis*, Digesting and Cicatrizing. For the former, our Applications immediately at receiving the Hurt, is anointing the Parts well with a Mixture of *Ol. Rosar. & Aq. Calcis ana part. æquales.* Or, *Ung. Alb. Pepuln. M.* Or, with *Mel Saponis*, covering the whole with a thin Linnen spread of the same, melted *Hogs-Lard*; or, dipped in any emollient Oyls, *Ol. Sambuc. Lini. Amygdal. Olivar. &c.*

The Blisters are rise in a few Hours, sooner or later, as was the Degree of Heat. These I only snip at present to let out all the acidulating *Serum*, and let the succeeding Dressings hereafter mentioned, strip off the *Cuticle*, as the less painful Way; for by its laying flat, and hindring the Access of Air, Cold, and the immediate Applications; the nervous *Papillæ* are better defended, and consequently the Pain mitigated, which it will be subject to, in a more extraordinary Degree till Maturation succeeds; which begins in a dressing or two, and then it separates every Day. Should you keep the *Vesiculæ* uncut, retaining the extravasated *Serum*, you run the hazard of deep stinking Ulcers, and a more unseemly *Cicatrix*.

At the second dressing, I always use a warm Digestive, thinner now while the *Cuticle* is on, to insinuate with the Mucosity of the Skin, and gradually blunt the fiery particles included: Rather with Pledgets of Tow, then on Linnen, or Cerate-ways, as softer and more alleviating, by not drying so fast: Unless the Scald be of large Dimension, then indeed, for Convenience, I edge it only with Pledgets, and cover the middle Space with a Cerate on Linnen; otherways those Edges drying irregularly, and without Digestion, would be apt to scab and inflame.

As

As the *Cuticle* separates, and Digestion succeeds; the Inflammation, Pain, and Tumor abates; and a *Cicatrix* soon begins. But as the Burn or Scald may not affect every Part alike, making in some Places deep and large *Eschars*, (as it is Water, Oyl, or Metal that burns,) requiring more Time to separate. Yet being Nature's Remedy for carrying off a greater Effect of Fire, it will require no other Alteration, than soaking them more carefully with the Digestive, never to be left off, till all is healed.

The Scars will be either smooth, as after *Epispasticks*; a Redness that will lessen or wear off: Or, according to the Intensity of the scalding Heat, and ill Management, they may be rough and unseemly. The Face as being most exposed, and most the Pride of Man, cannot be too carefully watched.

We dress here, commonly with a Mask of Linnen, guarding the Eyes against the Digestive its armed with; and as I consider, it is the Violence of Pain in those Hurts, that contributes most to *coarctate* the Skin, to which the *Cicatrix* forms: I endeavour to mitigate, with moistening this Mask two or three times a Day with thin Digestive, such as may continually malax and soften without exposing directly to Cold and Medicine, but then this can be only the first Day or two, for with Maturation it becomes necessary to remove; at Conclusion, the common Cosmetick is *Ol. Amygd.* & *Sperma Ceti*.

If the Burn be Gunpowder, such Grains as superficially stick, may from time to time be picked out with a Needle, as the Digestive loosens, or if not, they have a less dishonourable Mark then a Scald with Porridge. (V. *Contents*.)



X. FONTICULI.



ISSUES may be made in any fleshy Part; but the Places commonly chose are about the Middle of, and upper Part of the Arm, Six Fingers Breadth below the Knee, and Inside as most out of the Way. Inside the Thigh also; and *inter, vel super Scapulas.*

Fabricius, & alii, *Musculos rejiciunt, & Spatia inter Musculos eligunt, hac de Causa quia metuunt Musculus comprimatur Dolor excitetur & Motus impediatur; Humores facilius evacuentur — non Fonticulos tendines & Nervos attingat — Membranæ Nerveæ naturæ dolor excitat.*

The common ones, for a single Pea are cut with a Lancet, not on the Body, but Interstice of the Muscles, and not too near a Joint; done by holding the Skin up with your Finger and Thumb, and running the Lancet through so as to receive a Pea, rowled in Basilicon, a Diapalma Plaister over, Compress and Fillet-Bandage, after two or three Days the Peas are shifted without any digestive and Oil-cloth over.

They are subject to be dry and close up in some Constitutions, if the Pea gets out from loose Bandage and Carelessness *ut apertus servetur, Pila ex globulo ceræ — aut ex ligno hederæ vel radicis Gentian. aut Iridis.* I commonly order them to be dressed with Peas soaked in a Solution of *Roman Vitriol*, and inclose a thin Bit of Lead within the Compress.

Si Fonticulus fungosus aut callosus. Vit. roman. vel ustum. Ellebor nig. vel Mer. præcipit. adhibent, aut R Antim. crud. ʒj. pul. radic. Aristol. rotul. ʒss. Hermodact. ʒij. Cantharid. ʒj. ceræ virid. q. s. F. Globul. pyrotico indendi.

Those between or upon the Shoulders being designed to hold half a dozen Peas, are made with *Caustic* Medicines, that by their Heat and Activity can destroy the Texture of the Part, and burn to an *Eschar*. Those in use are the Lunar, or Silver *Caustic*, so called from the Silver in it, (*Quinzay 243.*) *Cauterium potentiale*. And *Lap. Infernal*. This we dissolve and mix up to a sort of a Paste in the Palm of the Hand, with a little *Saliva*, and spreading thick, on an Orbicular Pledgit, apply where the Opening is designed; first cutting a Hole in the sticking Plaister, that is first applied to keep the sharp Salts of the *Caustic* from spreading. When the *Caustic* is on, another Plaister, over that again, Compress and Rowler.

Post horas duas, tres, sex, vel octo prout medicamentum vim operandi habet, omnia removentur, & Eschara apparebit quod inungatur butyro insulso: Alii Cataplasma ad dolorem sedandum adhibent.

I after washing off the Salts with warm Water, divide the *Eschar*, and dress with Digestives till it separates.





XI. SETACEA.

SEATON, (a *Seta*,) Hog's Bristle, or rough Hair, that in the first Use of the Operation was thrust through the Orifices as now Silk, is of the same Design with Issues, to drain the Humours when vicious, or too much and incommodious to do by a Wound or Apostematation.

They may be drawn through any fleshy Part, but commonly on the Back of the Neck. It is a small Skein of Thread or Silk, strung through the *Seton* Needle, and dawbed well with Digestive: Then pinching up the Muscular Part with the Thumb and Forefinger of your Left-hand run it through, in the Middle of the back Part, the Apertures parallel, and about an Inch asunder. It makes a double Issue and must be cleaned and dressed every Day, by shifting the Skein armed as before, a Pledgit of the same on each Aperture, a soft Compress and retentive Bandage: They are held to be more serviceable then *Fontanels* in *Epilepsies*, *Hydrocephali*, and all Sorts of Fluxions.



XII. CUCURBITULA.

CUPPING is more expedient in Apopleck, Hyfterick, and Paralytick Cafes, the Pain as well as drawing forth of Blood, irritating and making Derivation: They are commonly put to the Shoulders and Inside of the Thighs; or as other Cafes may indicate, immediately to the Part affected.

The Scarificator is best reckoned for this Work, becaufe it makes all the Wounds at once, and with lefs Apprehenfion than our common Method at Sea, by a fingle Lancet.

Having marked the Diameter of the Glafs, by applying it clofe with a little Flock of Tow fet on Fire, (or Wax-candle fixed at Bottom,) we chaff the Skin, fcarify, and return it on again in the fame manner; and though a little painful, draws more commodioufly, than Exfuctions of the Air-pump can do in the other.

The *Phænomenon* is thus explicated. *When the Air in the Cupping-Glafs* is expelled, or greatly rarefy'd by the Fire; the Flefh fwells into it, and Exfuction of Blood follows. *First*, Becaufe the Gravity of the Atmosphere is taken off, from that Spot the Glafs is on, which makes way. *Secondly*, For the Particles of Air circulating in our Blood to expand and fwell, towards where the *Æquilibrium* is wanted; for this Reason a Sponge of cold Water to the Glafs, leffens its Attraction; warm Water or a warm Room encreafes it. And by the fame Philofophy, a Bottle heated and inverted into Water, will attract above one Third full.

To remove them you need only prefs the Skin with your Finger to let in a little Air; when off, wafh the Scarifications with warm Wine and Water, and apply *Ceratum Diapalm*.



XIII. HIRUDINES.



EACHES supply the Place of Venæsection, where the Veins are small, out of Sight, or dangerous to attempt, such as the Hæmorrhoids, Gums, and Temple Ramifications; also old People and Children, when fearful and unfit for other Operation.

The slenderest, smoothest, and liveliest are best, taken out of clear running Waters, their Backs greenish, and Bellies reddish.

Hirudines cavenda sunt, quæ magna habent capita, quæ sunt virides, nigræ, splendentes, lineas cæruleas aut lanuginem in dorso habentes, utpote quæ venenoso morsu maligna ulcera; nimium sanguinis fluxum syncopen, & alia mala pariunt, Sennertus.

On Shore they are kept in large Glass Jars full of Water, and shifted every Day to purge well and be ready for use.

When used, some advise immediately out of the Water, being then briskest: Others say, keeping them two or three Hours in a Box, will be an Incentive.

Chaff the particular Parts you set them on, and put the Leach on a clean Piece of Linnen towards it: If good he soon takes, and if not may be invited by smearing a little Pidgeon's Blood. Cutting their Tails when fixed, to let the Blood run through, keeps them longer on; and when you would have them leave off Suction, sprinkle a little salt Ashes, Aloes, or Vinegar at their Heads. Removed, let the Blood continue issuing a little, and then wash the Part clean with warm Wine, Milk and Water; tearing them off violently, leaves a Sting that may create Fluxion and Inflammation.

Sometimes the present Flux is difficult to stop, Mr. Turner, p. 481. tells us, he was forced to use the actual Caustery to a Child he had apply'd them too.

The

The Place where, is according to the Complaint: In Distempers of the Head or Eyes, they are put on the Forehead; Temples, behind the Ears or Neck; in Tooth-achs, to the Gums; Peristernum in Diseases of the Breast; and Fundament in Hæmorrhoids; if Revulsion be designed, they should be set on the muscular Parts always; for near or on the Joints, the Parts are more exanguous, and the Tendons laying superficially may incite more Pain.





XIV. VENÆ-SECTION.

The Circulation English Discovery.



THE Circulation of the Blood, on which depends for the greatest Part the Advantages to be reap'd in Venæsection, was the Discovery of our Countryman, Dr. *Harvey*, of whom, *Cowley*,

*This Secret to his Skill we owe,
And thousands more 'twas ready to bestow ;
Of which, a barbarous War's unlearned Rage,
Has robbed the ruin'd Age :
O ! cursed War, who can forgive thee this ?
Houses and Towns may rise again,
And ten times easier it is
To re-build Paul's, than any Work of his.*

Some Foreigners, envious of his Glory, have said it was first known to *Cesalpinus* a learned Italian, Physician to Pope *Clement VIII.* who died about 1603. and communicated by *Aquapendente* to Dr. *Harvey*, the Improver and Demonstrator of the *Hypothesis*.

Monf. Crouzaz, (p. 254. *Art of Thinking*,) gives to one Father *Paul* the Invention, who concealed the Discovery for Fear of the Inquisition. A Story something like *Vigilius*, a Bishop of *Saltsbourg*, heretofore condemned of Heresy by Pope *Boniface*, for asserting an *Antipodes* : It being very unlikely so polite a Court as *Rome*, from whence Christianity and Learning has spread to all the Parts of the Earth, should be so angry on Discoveries of Philosophy.

The Reasons for it.

The Reasons confirming a Circulation ; are, *First*, that constant Expulsion from the Heart into the Arteries, which without a Return by the *Cava* must soon cease ; and therefore, of Necessity circular.

Secondly,

Secondly, The *Valves* in the Veins are so formed, that the Blood flows from the less to the greater; *i. e.* from the Extremities to the Principals, but not contrarily.

Thirdly, The *Ligatures* for this Operation, are always nearer the Heart than the Puncture designed; (*viz.* above in the Arm or Foot, and below in the Neck.)

Fourthly, The Pulsation of the Arteries, and their not unduly Swelling, to their minutest Ramifications; evinces their different Use from the Veins: That the one are conical to bring Blood to the Parts for Nutrition, and that the other carries back what remains, and from a narrow to a wider Channel.

Phlebotomy on this Principle of the Circulation, is become one of our most universal Remedies; and for which *Bellini* gives a general Rule. *Vena in omni morbo est secunda, in quo minuenda quantitas, aut augenda velocitas, aut refrigerandum, aut humectandum, aut aliquid adhaerens vasis dimovendum, aut abripiendum.* V. S. a principal mon Remed.

In all Repletions and Redundancy, where Derivation or Revulsion is required from a nobler Part, or there is too great a Tension of the Solids, it is held good. Apoplexies, Rheumatism, Cough.

In Plurifies also, Fluxes, Fevers, Aches and Pains; Women advanced in Pregnancy, and oppressed; Convulsions, Lassitude, Frights, Falls, and Hurts of all Sorts.

The *Portuguese* practice it the most of any People I ever knew, on every Occasion and often, on this Reasoning; That the human Bones dried making not above * 20^{lb.} Weight, the Muscles six or seven, our whole Composition comparatively must be fluid; and that most Distempers must lay in the Fluids that are in such a perpetual Flux and Change, so as the whole Quantity to be altered in a Month's time. Wherefore, say they, if we can run the bad off quick by bleeding, we shall have a newer and better Mass untainted. A Mistake, because the Bowels and Glands elaborating and depurating this Juice, or what are the Solids of them, must be in Fault How used by the Portuguese.

* *Dr. Keil says, a Body of 160 lb. will have 127 of it Fluids.*

Fault at the same time; and not to be amended, but hurt by so large Extractions. Those most likely to recover such an Exhaustion, will be young, vigorous, and sound Bowels; but *People advanced* in Years, run a bad Chance in the Trial, the Faculty of Sanguification like others failing of their Vigour.

*In large
Quantities.*

There is on this way of reasoning, hardly any Distemper, never so malignant, but what they bleed largely. *Zacutus*, an eminent *Portuguese* Physician, and others, prescribe it to 303, even in *Tertians*. Mr. *White* an *English* Surgeon who settled at *Lisbon*, followed (he tells us) the same Practice, and with great Success; a large Man which he calls *Cardinal sized*, (Two hundred Wt.) will bear losing five Pound of Blood in a little time. In all inflammatory Cases, even *pestilential and malignant* Fevers, he took away large Quantities; and thinks nothing has done more harm in Physick than those bugbear Words; evinced from our Nasal and Hæmorrhoidal Fluxes, apt to succeed under such Circumstances and Relieves. Nay, he approves of it in the Height of a Salivation, whether of the natural Ptyalism in the Small-Pox, or that procured by Mercury; for, says he, it may be unequal sometimes to the Plethora, and threaten Suffocation; mentions Rheumatisms and Apoplectick Dispositions, cured after all Method else had failed, by taking away in a short time ten Pound of Blood.

He farther justifies the Practice by *Sydenham*, having bled in the Plague; and that *Lewis XIV.* of *France*, at 13 Years of Age, was bled five times in the Small-Pox, &c. to all which I answer, That as there cannot be a total Change at once, we can never this way draw off the Cause of the Disease. In Sanguification the Blood being every Day made weaker, by bleeding, and the Distemper consequently stronger; whatever Food is taken in to supply, will have more Dissimilitude and less Ebullition and Strength, to make it homogeneous: Instead of Oyl and Sulphur, the Mass becomes like Water, apter to extinguish than keep up the Flame of Life. It is something like our modern Practice of blistering from the Crown of the Head to the Small of the Leg; making a Man in *Job's* Condition, and then magnifying the Recovery; whereas, like his, it was only Providential, a
strong

strong Constitution, and half the Providence would have done, had there been but half the Blisters.

An extravagant Discharge of *Serum*, helping on its Tendency to Stagnation. I have known a Person subject now and then to a Lipothymia, of a likeness to Appoplexy, the Cause, as I have conjectured, a too great Thickness or Viscosity of the Blood, there not being 3j of *Serum*, when drawn forth, to 3xij, of Blood, and with Blisters and Fontanels, *inter Scapulas*, instead of relieving the Fits, returned quicker and stronger.

There are others who condemn as unjustly all Evacua- *Others op-*
tions this way, even in Fevers. *Manwaring* says, the *pose Bleed-*
cause of febrile Heat, is most frequently the Stomach, the *ing.*
Foundation of Complaints, by an insufficient Elaboration,

consequently a Debility of Transmission and Influx, *V. S.* therefore disables Nature in Fevers, their Cause being dependant on the Stomach; and should the Fervour abate, he ascribes it to Nature's being less able to struggle; condemning it still more in Small-Pox, malignant Fevers, and any Distempers arising from the Depravity of the Blood.

Non sanguis sed pituita peccat qui sanguine detracto magis *Other O-*
crudus. Avic'n in febre intermittente admittit venæsectio- *pinions.*
nem— & *in febribus putridis saluberrimum, ut natura*
parte oneris levetur, qua tanquam sarcina premitur; quod
reliquum est & coqui, potest concoquat facilius, & quod
expelli potest expellat.

Sennertus in febribus Pestilentibus V. S. instituenda est,
si mature, sed Malignitas diffusa vires debilitat & tutius
intermittitur.

Various are the Opinions of learned Men, when, *When ne-*
where, and how much to bleed, especially in Fevers? *cessary.*
so that repeat it or let it alone, tis like *English* Divinity, a
Text for any Tenet. To cast in my own Opinion upon
the Subject, robust and plethorick Constitutions; in Fevers,
Rheumatisms, Falls or Hurts of any kind, where the
the Blood is fermenting, or likely to do so, Inflamma-
tions; and for Revulsion in such Pains or Stupor, Bleed-
ing is absolutely required, and a Repetition with a Regard
to the Age and Strength. A humane Body in these
Cases, something resembles a Cask of fermenting Liquor,
if you neglect Ventilation, it will be apt to suffer, and
soonest at the weakest Part; but if the Habit has grown
cachochymious, there is a Callosity, or a Softness of the
Solids,

Solids, as in Age and great Corpulency, (as well as others) more properly called Distempers; then to carry on the Comparison, it will like the same Liquor, from being too much exposed grow more vapid. The Elasticity of the Solids contributes to a fit and perfect Sanguification, therefore where the Fibres are slackened and grown loose, loosing much Blood will induce a present, and perhaps a lasting Weakness.

*To what
Quantity.*

To the Rule of how much, or how often to be repeated, I can only lay down in general, and which however is liable to exception: When a young Person, or of Sailor-like Constitution, in any of these Cases above, are relieved by Bleeding, the Indication for more continues as at first, though the Springyness of the Solids seems diminished; for here it is accidental and not the Habit, owing to a Lassitude and Faintness, that may as well arise by an undue Increase of Blood, as taking it away; since there ought to be a Proportion between this Elasticity of the Solids, and the Quantity of Blood, to make Nutrition or any of the Secretions go right. To ascribe a Fault to the Stomach, does not lessen the Obligation of this Operation of itself, but points out an Emetick afterwards, both being necessary.

Lastly, the more acute, the quicker should be the discharge; for if by neglect the Distemper gains, and a Loss of Stomach imputable thereto, this Accident will be the same as a frequent expence of Blood; stopping the Fountain, being much the same as running it off in too many Streams.

Bleeding, when it is a necessary Repetition of Custom, or on any ordinary Accident, would be best if we could chuse it in Spring-time, and in a Morning fasting. People are more sprightly after the refection of Sleep. A full Stomach may nauseate, and throw up the chylous Substance; and Bed-time be insecure, the Orifice large and unclosed. Summer dissipates the Spirits too much, and cold lessens the natural warmth; but when Necessity urges, we are to mind neither this nor that, Season, Time of Day, Youth or Age; though before the 12th Century in *Averrhoes* Time, it was not thought safe to Bleed at all, under 14 Years of Age.

*The Veins
opened.*

Any *superficial Vein*, may be taken for the Operation, in the Hand, Foot, or Forehead; but Custom, together

with

with Conveniency, has generally fixed it for the Arm, Foot, or Neck. These Veins having a Mediocrity between too large or too little; either of them according to the Doctrine of Circulation, answers an equal Purpose, and only more eligible in one than the other, as the Vein may be more apparent, and less danger of touching Artery or Tendon. Some chuse the Region *opposite* to the Complaint, and instance Head-achs and Deliriums, immoveable till bled in the Foot, alledging a contrary Region also best for Revulsion; *V. S.* in the same Limb, or nigh the Hurt, does probably increase the Fluxion; in both Cases, ease succeeds better by a remoter Derivation, and when it joins with the fancy of a Patient, or I could create that fancy, I would chuse a different Side, and an opposite Region.

A Surgeon like a Prime Minister, must not appear in any *There may*
Hurry or Concern. Women and People of Distinction, *be Dignity*
unused too, are apt by Nature to be timorous and pre- *in the*
judiced on this, which may make him so too. *smallest*

Seat the Operatee to a light Window, and spread a Cloth in the Lap, with as much Carefulness, as if all the Art consisted in diverting the Thoughts, and bespeaking a Likeness; then steddying and tightening the Vein, once or twice with the stroaking up the Fillet, tie underneath.

The Vein is swelling while we take out the Lancet, and then letting the Hand rest upon you, turn the Arm to that very Posture its to bleed in, (that afterwards altered may stop it,) and grasping with your Left Hand, and Thumb upon the Vein, open with one Motion of the Lancet; some approve a second *Elevation when entered*; but where People are fearful, the quickness is a more essential Circumstance, and commands the Orifice better; too small a one may leave a *Thrombus*; and too large, or through, a painful weakness; for if the Fibres are divided in Length or Breadth more than necessary, or made over former Scars, they sometimes remain sensible of the Section a long time.

While the Vein is streaming, shift the Person's Hand from yourself, to a Staff to rest on, lest the Arm grow weary. The Quantity respects the Distemper, Age, Season, and Constitution, but $\frac{3}{4}$ or $\frac{3}{8}$ is commonly thought enough at one time from the halest.

In

V E N Æ S E C T I O N.

In binding up, observe the same Neatness as on binding on; that no Blood, if possible, may stain the Linnen, Shirt, or Cloaths; in order to this, loose the Ligature, and if it does not cease, let it flow still 3fs. or an 3j, till the Vein has fell; then clapping your Left Thumb on the Orifice, draw away the Porringer with the last Drop.

A By-stander holds a Bason of Water underneath, standing at the Elbow while the Surgeon with a Sponge or Napkin washes the Part clean, often making Application of it to the Orifice, more wanted if large, and the Person young and sanguine; the Coldness of this, and the time it takes up, resists farther Effusion, and makes the Stream continuous. *Stagnating Threads*, and Globules of Blood left in the Orifice, or an ill polished Lancet, subjects the Wound to Festering; guarded against by a Pledgit of *Basilicon*, and *Ceratum Diapalm*. In a *Thrombus*, use thick wet Compress.

If more Difficulty presents in stopping, we choak the Orifice with dry Lint, better Compress and Bandage, recommending the Arm to be kept quiet some Hours. I should not dwell so minutely on so inconsiderable an Operation, but that I know the Neatness in doing it, will bespeak as good an Opinion, as of those who have slain their Thousands.

Danger in
V. S. A Tendon under the *Mediana*, and Artery under the *Basilica*, are now and then touched; but every sudden Pain and Tumor following *Phlebotomy*, is not to be interpreted either. Cutting through a Vein and grazing on the *Aponeurosis* of the Muscles, or their Membranous covering, especially with a rusty Lancet, will excite Inflammation and Fluxion, sometimes Suppuration, and Blood may flow *per saltum* by the nearness of the Artery to the Vein.

The *Foot* must be plunged into a warm Bath, (a Cloth being at the Bottom of the Tub,) to invite a greater Quantity of Blood downward; then making a Ligature three or four Fingers Breadth above the Ankle, the Return is intercepted, and swells all the Veins.

The *Saphæna* within side, is commonly chose for the Operation, as fairest and largest, and may be punctured above or below the Joint; or when these Veins on the
Instep

Instep or Outside are more conspicuous, they doubtless answer the same End.

When the Vein has rise well, dry the Foot; and holding your Left Thumb down upon it, that the greater Thickness or Laxity of the Skin be no Impediment, plunge into the *Saphæna*; there is no danger this side the *Periosteum*, but in any of the other Veins, the Tendons lay underneath. Opened, I chuse to stream it into a Porringer if free, the better to ascertain the Quantity; but not issuing without the warmth that must be judged of by the Colour of the Water, the Time, and little Filaments on the Surface, or sticking about the Patient's Leg.

The *Jugular* is chose in gross indolent People, who have had, or fear from a luxurious sedentary Life, Lethargick, or Apoplectic Symptoms, Dizziness, violent Head-achs, or inflamed Throats; as fancying from being nearer the Brain, a quicker and more immediate Relief may ensue. The common Method here, is making Ligature round the Neck, below where the Surgeon is to open the Vein; but as this is incommodious, and brings on suffocating Symptoms in Quinzey, Asthma, or any Distemper affecting the Brain, Throat, or Lungs, for which its usually prescribed; the neater way, is to let the Patient clap his Hand on the contrary side, that stopping the Reflux in that Branch; this you are to open, may swell the better, and bear the Pressure of your Thumb, where the Ligature should have been; which steadies the Vessel, to be opened *secundum longitudinem*; thrusting (if it does not stream out,) the Porringer close instead of your Thumb, that the Blood do not dawb. The Dressing after being washed, is *Empl. Diapalm*.

To open a Vein in the Middle of the Forehead. Between the Cartilages at the Tip of the Nose, or the *Ranula* under the Tongue, all require the same sort of Deligation about the Neck. In opening this last, it is convenient to cover all but the Point of the Lancet; and in opening the nasal Branch, to pinch up the Nose with your Left Hand, and thrust the Lancet deep between the Cartilages.

Most People call for a Judgment on the Blood, whether good or bad, and take it principally from the Colour, than which nothing is more fallacious.

An Opinion to be given whether good

The or no.

The Blood is not the same out as in the Body, has its Colour brightened chiefly from the Air, which is more intimately mixed by a slow than a quick Stream, and exposed, the Superficies we see is mostly affected; but if not, why is a bright Florid to be held the best? since the highest and most malignant Fevers shew that Colour most? The *Cava* returns a black Blood, and yet the Pulmonary Vein, by only circulating the same Blood through the Lungs, returns it red to the left *Ventricle*. Colds and Coughs have it red and frothy.

A blue, yellowish, or whitish Film, shall come on the Blood of the healthfullest People, and continue looking so, though exposed a Week to the Air. People accustomed to eat much Flesh, have always a scorbutick Taint, of which these Colours are a Sign, and so general, that were the Rule to be allow'd, it might be said, there is no noble or good Blood in *England*; or that if there were, the Beggar might claim it before the Person of Quality; he oftner missing these scorbutick Colours. Some think the best Prognostick, is from its sweetish Taste, and the *Crassament* and *Serum* well proportioned, (one and a half of this to one of that,) but here there may be found great Differences, and the People in equal good health.

The best way then at last, will be by the Regularity of its Motions and Separations, or those freest from Complaint. Mr. *Howel's* Mark is this, *good Blood, says he, produces good Humours; good Humours, good Thoughts; and good Thoughts, good Works*; and by that shall all Men know the Blood to be good.

Observations from *Boerhaave* and others.

The Blood mixed with *Aq. Fortis. Ol. Vitrol.* or, *Spt. Salis*, when it comes out of the Vein, coagulates immediately; but with *Spt. Sal. Armoniac.* preserves its Fluidity longer, and acquires a more florid Colour; mixed with a little Vinegar at Emission will hinder the Separation of its Parts.

The *Serum* is neither acid nor alcalious, nor has the Blood any such opposite saline Principles, as some pretend. *First*, because if there were, the Signs of some Ebullition or Rarefaction would appear in the Receiver presently; and, *secondly*, the Vessels would burst from the Expansion they would create; and thinks such opposite Principles repugnant to Nature, Health, and Life.

The

The *Serum* when cold, takes not the least Effervescence, from a Mixture of Acid or Alkali; but put a fixed Salt to it *Spt. Salis*, the Conflict is violent.

The *Serum* contains the Matter of Nutrition, all growth and repair proceeds from it, as the white of an Egg forms all Parts of a Chicken; the Blood divested of this, is proportionably difficult to turn to *Pus*, in any Chirurgical Cases, where wanted.

There is a Solid and Fluid in the Blood, something like Curd and Whey; the Solid spontaneously dissolves again to Fluid, and the Fluid will coagulate with *Alcohol*. (the solid if hot.)

The Parenchymous part of the Body, whether Bowels, Muscles, &c. are nothing but a Congeries of Blood Vessels and Liquors, seen by pricking any Place never so slightly. A fat Horse rid extreme hard, and kept but one Day without moisture of Meat or Drink, will for this reason be very thin: He wants the Juices that stuffed the Vessels. For the same reason, the poorest Cattle fattened, will eat tender, the Addition is of new, and therefore young Flesh.

Milk has some Similitude with Blood, (*Boerhaave*, p. 210.) Drop says he, *Ol. Tart. per Deliquium*, into a little Cow's Milk, diluted with Water, and boiled, it grows Yellow; and with more of the Alkali, and a longer Boiling, would become of a deep Red, separating into curdled Masses, tho' not so large and solid as when turned by an Acid. Hence he deduces, that Milk in cold weak Habits, is a long time, if ever, brought to the redness of Blood, but will be yellowish and greenish, and their Countenances the same.

The Chylous Colour, according to Dr. *Lower*, disappears the 12th Hour from the last Meal, longer if it abounds with Acids. Dr. *Willis* proposes Bleeding into Water, to make those white Filaments conspicuous. The *Phil. Transactions*, N^o. VI. relates a pure Chyle coming from the Veins four Hours after Breakfast; of another that turned white in the Porringer, and over a gentle Fire hardened like an Egg.

The Blood running into distinct Parts on Extramission, shews its constituent Parts to have a Motion within itself in the Vessels distinct from Circulation.

VENÆSECTION.

The *Serum* is specifically heavier, seen by its swimming above the other.

Arteriotomy, now and then in violent Head-achs, Phrensies, and Inflammations, supplies the room of *V. Sectio*. and is always at the Temple, because the Skull resists, and makes a closer Bandage than at any other Part.





XV. RUPTURES.

WANT of Health is not always owing to Intemperance and irregular Living; it sometimes proceeds from a wrong Constitution of the Parts of the Body. The weakening of any one of which is a *Disease*; and this Weakning, among other various Causes, may be occasioned by a vitiated Site, that probably induces an *Atonia*: And this, in respect to *Ruptures*, may either be through the Fault of the Part itself, or else those that contain it.

To a right understanding the Nature of our present Subject, it is necessary to be acquainted with the Parts immediately concerned, *i. e.* the *Peritonæum*, *Omentum*, and *Intestines*, *Scrotum*, and *Muscles* of the *Abdomen*; for whoever is ignorant of the Make and Use of these Parts, (that lie very nigh to those necessary for the Conservation of the *Individuum*, or Propagation of the Species) will be so far from redressing, that it is a Chance if he does not aggravate the Evils they may suffer under.

Mr. *Cheselden* remarks, that from the Edge of the *Ilium*, to that of the *Os Pubis*, runs a Ligament, to cover the Iliack Vessels as they descend to the Thigh; and that under this Ligament, together with the Vessels, he had twice met with a Rupture from the *Abdomen*, into the Groin. Dr. *Turner* cites Serjeant *Bernard* on the same Case, both cautioning to examine well, and avoid opening them. Mr. *Ruyfch* asserts, he had twice known the Bladder descend in *Scroto*, and the Person made Water by squeezing the upper Parts towards the *Scrotum*.

Previous to the Description of the Make and Use of the Parts, it will be necessary to observe in general, *First*, from their Site, that in *Umbilical Ruptures* the *Intestinum* fall down, *Jejunum* always comes forth first; in *Prolapsu Ani*, the *Rectum*; that no other than the *Ilium* passeth the Left of the *Annuli Musculorum*; and that sometimes Part of

the *Colon* on the Right Side may be protruded further. If the Ligaments of the *Colon* may be dilated enough, the *Cæcum* may fall down into the *Inguen*. It seldom happens so, indeed; but I think would be less to be wondered at, than what Authors tell us of the *Ventricle*, or of the *Spleen* and *Liver* falling downwards by a Relaxation of their Ligaments. Secondly, From their Magnitude we may observe, that the *Caul* cannot in its proper Dimensions touch the *Inguen* or *Scrotum*; when increased in Thickness and Weight, indeed, it may dilate or break the *Peritonæum*; and this again may be casually broken or distended, (as other external Hurts happen, and so let the contained Parts fall even into the *Scrotum*; but where the *Bubonocèle* shall be large, whether, or no, Part of it might not be safely cut off? nay, whether ever the Parts can be restored to their natural State, or secured from interminating Symptoms without it? From the Processes of the *Peritonæum* (through which, *Ruptures* in both Sexes fall,) it does no way appear, that any considerable Part of the *Intestine* (especially stuffed with Excrement) can pass; and that therefore their arriving sometimes to such Largeness and Easiness of slipping down, must be from the frequent stretching and dividing the *Muscular* Fibres, by a long and neglected Bearing and Tendency of the *Caul* and *Intestines* towards the *Inguen* and *Scrotum*, external Hurts and Strains now and then contributing a Share: From which Frequency, and the Occasion of it, we frame our Prognostick.

Cautions
in return-
ing the
Intestines.

On replacing the prolapsed Parts, there must be a due Regard had to the Obliquity of the *Processes*, which are made to pass aslant through the *Annuli Musculorum*; and therefore must be repressed towards the Margin of the *Os Ilium* on the hurt Side: Unskilfully to force a Way between the Muscles, would be painful and dangerous; and so would the mistaking a *Testicle* in the *Inguen* for a *Rupture*.

But to be more particular in the Parts concerned:

The
Muscles of
the Belly
described.

The *Musculi Abdominis* help to support the *Viscera*, and hinder the Descent of the *Intestines*, through whose *Annuli* they difficultly slide, and are as difficultly returned, as will best be made appear from their Situation.

1. *Musculus Obliquus descendens* is fastened above to the *Costæ nothæ*, and some of the *Costæ veræ*, on the hinder

hinder Part, to the *Muscles* of the Back, from whence it proceeds on each Side, and comes to the *Linea alba*; beneath to the *Os Ileon*, and Margin of the *Os Pubis*; nigh which its Fibres are opened to make Room for the Passage of the *Spermaticks*.

2. *Musculus Obliquus Ascendens*, lie under the former, a little larger, higher, and more remote from the *Linea Alba*, affording a Passage also to the *Spermaticks*, called *Annulus secundus*.

3. *Musculus Rectus* goes directly from the *Cartilago Ensiiformis*, to the *Os Pubis*.

4. *Musculus Pyramidalis*, sometimes one on each Side, and sometimes single, lies under the former, and at the joining of the *Bones*.

5. *Musculus Transversalis* goes from the Appendices of the *Vertebræ Lumbares* athwart the Belly; its upper Part is fastened to the *Costæ Nothæ*, the lower to the *Ossa Ischii* and *Pubis*; where, like the *oblique Muscles*, it forms another Ring for the Passage of the *Spermatick Vessels*, larger, higher, and at greater Distance from the Middle of the Belly.

6. *Musculus Cremaster* lies on the Folds of the *Inguen*, according to its Length, and propagates its Fibres to the Testicles, becoming their proper Suspensors.

All these Muscles on the Inside of the *Abdomen*, are covered by the *Peritonæum*, whose Productions, without separating any of its Fibres, are carried also to the *Scrotum*, and are the Parts which primarily suffer in *Ruptures*.

Peritonæum is a membranous Duplicature, covering and containing all the *Viscera* of the *Abdomen*, thickest from the Navel to the *Os Pubis*, (especially in Women for Distention in Gravidating.) Its internal Surface smooth and unctuous, from a Number of small Glands that bespread it; which in *hydropick* Bodies grow (as the Membranes do) more large and visible. It is connected on the Outside to the *Musculi Transversales* and *Linea Alba*; below to the *Os Pubis*, on the Sides to the *Ossa Ilii*; behind, to the *Os Sacrum* and *Vertebræ Lumbares*: It is also reflected from the inferior Surface of the *Diaphragma* to the convex Surface of the Liver, which it suspends, called *Ligamentum Hepatis Suspensorium*. The exterior Coat hath two Processes falling down into

Peritonæum described.

the *Scrotum* in Men, and make each *Tunica Vaginalis*; and in Women the *Involucrum* for the *Ligamenta Uteri Rotunda*. Sometimes the not knowing precisely where those Processes pass the Perforation of the Muscles, has made *Ruptures* taken for Tumors of another sort, attempting Suppuration: *A. Paræus* mentions a Surgeon, who, on opening an Abscess'd Navel, the Bowels instantly fell out; and cautions others against meddling with such Ruptures, particularly in Children. Dr. *Linacre*, Founder of the College, and Physician to King *Henry VIII.* died with the Breaking of a *Hernia*; and contrarily have been the Occasion of putting Trusses on Apostemations that should be opened. In morbid Cases great Quantity of *Serum* hath been found between its Duplication, where there hath been none in the Cavity of the *Abdomen*; and is supposed the *true Tympany*, frequent in Women whose *Ovaria* are probably first affected; and occasioned chiefly by the Pains and Difficulties in Miscarriages, or Child-Births, either when natural, or the Effect of violent Means.

Funiculus
Umbilicalis.

Funiculus Umbilicalis consists of a Vein, two Arteries and the *Urachus*, which soon after the Birth dry into the *Ligamentum Umbilicale*, or Suspensor of the Bladder. The Knots in it are fleshy Membranes, to moderate the Motion of the Blood towards the Infant; and Care should be taken that the Ligature made on it at the Birth, should not be too slack; a Mistake that has been the Occasion of fleshy Excrescences of considerable Bulk, frequent among the Negroes of *Africa*; and, if ever cured, requires a second Ligature, and perhaps *Escharoticks*: Nor should it be cut between the Ligature and Child, but without it.

The Omentum, or
Caul, described.

Omentum covers and fluctuates on the Intestines, extends from the Bottom of the Stomach to the Navel, where it commonly ends, or rather a little lower on the Left Side; which is the Occasion that the Lapse of it is generally there, down into the Region of the *Hypogastrium*, and sometimes the *Scrotum*, causing *Hernia Epiplocele*: When in Women it happens to slip down between the *Matrix* and Bladder, it makes a Compression on the Orifice of the *Uterus*, and thereby hinders Generation. Its Weight commonly about half a Pound; but in *hydropical* Persons much more. *Fabricius Hildanus* saw one of fifty six Pound.

The

The *Stomach*, in its natural Site, seems so placed as to *The Stomach* be unable to give any Disturbance to the *Hypogastrium*, yet accidentally may contribute much to the Production of *Ruptures*, either as it is pressed downwards by the *Diaphragma* in violent Coughing; or through Intemperance in eating and drinking. For as the Stomach may ordinarily hold three or four Pints, so if it be distended beyond that, by voracious and debauched Meals, or by Flatulencies from improper Diet, it may thus accidentally help to press the *Intestines* towards the Process of the *Peritonæum*.

The Intestine commonly falling into the *Scrotum*, and *The Intestine falling* causing a *Hernia Intestinalis*, is the *Ileon*; being about twenty one Hands Breadth long; it possesseth almost all the circumferential Space below the Navel. It is not fastened to the neighbouring Parts, as the *Colon* and *Cæcum* are, which, for that Reason, fall later into the *Scrotum*, and not till the *Rupture* is large.

The *Scrotum* is externally divided by a Seam from the *The Scrotum described* *Anus* to the *Penis*, and has an outward muscular Coat, which contracts it into a Purse, as it were, and an inward one called *Dartos*, which gives a covering to both Testicles. Each Testicle besides hath three Tunics; the *Erythroides* from the *Cremaster* Muscle, which suspends it; the *Elythroides*, or *Vaginalis*, from a Production of the *Peritonæum*; and the *Albuginea*, nervous, white, and thick, which immediately clothes it, and whereof the Testicle being divested, appears to be a soft loose Body, composed of several seminal Vessels, and many capillary Branches of Veins, Arteries, Nerves, and Lympheducts, like a Gland. They have also pertaining to them, the *Epidydymides* and *Vasa Deferentia*: The former small round Bodies arising from one End of the Testicle, and running their whole Length: Their Use is to receive the *Semen* separated in the Testicle, and pour it into the Trunks of the *Vasa Deferentia*, with which they are continuous.

The *Uterus* is small, but being membranous, very *The Uterus* distensible, placed between the Bladder and *Rectum*, having two broad Ligaments, which from its Bottom are fastened towards the Kidneys, that the Weight of the *Fætus* do not bear it downwards; and two round Ligaments, which passing with the *Processus Peritonæi*, are fastened

fastened to the lower Part of *Os Pubis*, and upper Part of the Thighs, to hinder its Ascent, which might disturb Respiration, or the Office of the Stomach. The exterior Parts are obvious, and need no Description.

Definition
of Rup-
tures.

Burslenness, termed *Ruptura & Hernia, quæ sunt tumores contra naturam, partium quarundam membranacearum imi ventris, producti situ depravato*, i. e. Tumors produced, against the Order of Nature, from the depraved Site of certain membranous Parts of the *Abdomen* (the Intestines, or *Omentum*) breaking forth at the Navel, or, what is more common, sliding into the *Inguen*, or *Scrotum*; the former imperfect from a Relaxation of the *Peritonæum*; the latter perfect, and more properly termed a *Rupture*.

The Sorts,
in respect
to Place.

In respect of this Site, they are termed *Omphalocele*, or *Hernia Umbilicalis*, *Bubonocèle*, or *Hernia Inguinalis*, and *Oscheocèle*, or *Hernia Scroti*.

In Respect
to the Parts
changing.

In Respect of what membranous Part it is, that has thus changed its Place, (Intestine or *Omentum*,) they are termed *Intestinalis*, or *Epiplocèle*, (*Zirbalis*.)

In Respect
to the Mat-
ter when
in Scroto.

And the *Hernia Scroti*, from the peculiar Matter fixed in it, may have other Denominations, *Ventosa*, *Aquosa*, *Carnosa*, and *Varicosa*, (*Pneumatocèle*, *Hydrocèle*, and *Circocèle*;) and sometimes by a Complication *Hydro-Pneumatocèle*, *Hydro-Sarcocèle*, as well as *Enteropiplocèle*.

And those
may be
variously
compound-
ed into
more.

The immediate antecedent Causes of *Ruptures* are various; *Omphalocele* and *Bubonocèle* are from a Rupture or Distention of the interior Part of the *Peritonæum*; but when either the *Caul* or *Gut* appear in *Scroto*, there is not only this interior Rupture, but also the exterior *Apophysis*, or Process of the *Peritonæum*, must be relaxed, if not ruptured. Again, in *Hydrocèle* and *Pneumatocèle*, there is no Occasion for Rupture or Relaxation; for these proceed from the immoderate Moisture and Laxity of the *Peritonæum*, as is manifest in Children.

The Causes
of Rup-
tures.

External Causes are any violent Motion of the Body; the eager Crying of Children, Distention of the *Abdomen* by hard Labour, immoderate Venery, hard Riding, carrying heavy Burthens, Falls, straining the Voice, hard Stools, Coughing, Sneezing; and even the very Weight of the *Viscera* in fat Persons, has caused imperfect, and when neglected, perfect Ruptures.

Signs

Signs of *Bubonocoele* is a round Tumor in the *Inguen*: It *Signs to* begins from *Os Ischii*, increasing by little and little; and *distinguish* when pressed, does readily go back. If an *Enterocoele* is *them* in *Scroto*, the Tumor seems hard, and when pressed goes back with Noise: If *Epiplocele*, the Tumor will feel soft like Wool; but unequal, and does not go back so easily as the Intestine. Signs of the *Peritonæum* ruptured, are a sudden Increase of the Tumor with acute Pains: In a Relaxation not so; they are less, and come and vanish together. Windy Meats, and plentiful Meals, increase all these Tumors.

The watry and windy Ruptures increase gradually; but are perpetual, *i. e.* do not disappear by laying down, nor are to be repositied as the others, and may be thus distinguished: The *Hydrocele*, or watry, is soft and smooth, until the Augmentation of Humour has greatly distended it, and then is transparent by Candle-light: The Tumor may be either seated between the Coats of the Testicle, or included in a proper *Cystis*, judged of chiefly from their Figure. The former assuming that of the Testicle, is oval or oblong; that in the *Cystis*, round. The *Pneumatocoele*, or windy, is much lighter and softer than the other, and makes a kind of Sound when ticked upon. *Sarcocoele* is known by its Unevenness, Hardness, and dark Colour. *Circocoele* by the Knotting and Distension of the Veins. If the *Omphalocoele* be from the *Omentum*, it retains the natural Colour, is almost without Pain, and returns without Noise as soon as the Patient is laid on his Back: If the Tumor be from the Intestine it is more uneven; if superfluous Flesh, it is more difficult to press in; if Wind, it is softer, slipping with Noise under your Finger, without going back; if Water, it is of a darker Colour; and lastly, if the Tumor be from Blood, it is livid like an *Ecchymosis*.

The general Fault whence proceed the Mischiefs Ruptures are incident to, is trusting them in their Recency to unskilful People, who, not understanding any Part of Surgery, cannot distinguish Tumors, and so proceed improperly; or else it is from a Negligence in the Parties themselves, who, though well advised, may not follow it.

Children

Prognosticks.

Children from their violent Crying, the Softness of the *Peritonæum*, and feeding on crude Milk, are most subject to Ruptures, especially in their earliest Months. If their *Omphalocele* is caused by the Intestine; *Omentum*, by Wind or Water, it is curable; if from Flesh or Blood, doubtful and difficult. Again, their *Hernia Omentalis* and *Intestinalis* may be cured by proper Means till *Puberty*; but in Adults, scarcely without Surgery. The two Sorts of *Bubonocoele* are common to Men and Women, though not so frequent with the latter, by reason of the greater Thickness of the *Peritonæum*. Those in *Scroto* are peculiar to Men, though a Resemblance happens sometimes in the other Sex; for their *Ligamenta Uteri teretia* pass between the *Laminae*, as the *Vasa Spermatica* in Males do.

The left *Enterocoele* is more grievous than the right; because the *Cæcum* is always replete with Excrement, and not fastened to the *Omentum*, but pressed upon by the lesser Intestines; most dangerous of all, are, when the Gut is doubled and filled with *Fæces*; the Patient often in this Case, suffering a Fever and Gangrene, and goes off with *Singultus*.

Sarcocoele and *Circocoele*, if large, are not safely managed either by Pharmacy or Surgery. When they are recent, and only the Effect of too hasty and quick Purges in *Gonorrhæas*, they submit to mild and anodyne Topicks; but when confirmed, they take the Nature of a *Schirrhus* on the Testicle, and will be dangerous tampering with, lest they turn cancerous and mortal. *Hydrocele* and *Pneumatocele* are in the Beginning curable by Medicaments; but when the Tumor forms itself large, Surgery is requisite.

Herniæ Intestinales.

Herniæ Intestinales, in People of full Growth, are, for the most part capable only of being kept up by good Trusses and Bandage, which Patients must be cautious of neglecting, for grievous Pains succeed their disuse, Cholick and Fever; and sometimes when the Excretion of the *Fæces* are stopped, there follows vomiting, and an Inflammation of the Gut, a *Singultus* and Death. Yet it may be observed, when the Diruption of the *Peritonæum* is large, a Tumor in *Scroto* may be produced as big as one's Head, without much Danger or Pain. This is obvious to any one, in the Objects of this Sort that present in the Streets, who have as free

a Passage, no doubt, through the prolapsed Intestines, as if they were *Intra Peritonæum Abdominis*. The only seeming Inconvenience is Bulk and Weight.

Hernia Omentalis is difficultly reduced and retained, yet *Hernia* less so in Persons of a humid, than dry Habit; in the *Inguen*, Omentum than the *Scrotum*; it will be most hard when any Excoriation from rough Handling, has been the Occasion of generating some intervening viscid Substance to hold it fast.

In general, we should prescribe, a Diet, warm, dry-*The Cure.* ing, and of good Nourishment, as Mutton, Veal, Lamb, Pullet, and the like, keeping their Bodies soluble by this, or purging; avoiding at the same Time, all Herbage, Fruit, Fish, and Milk Meats, with what else are supposed to engender Crudities. Their Drink a red Wine with Water, wherein if Steel or Iron be quenched, it is better; a *Chalybeate* Mineral Water, or a medicated Ale; if a Cough obtrude, the proper Remedies must be administered, and all Intemperance and Excess must be forbid, whether it belong to Eating and Drinking; or to Exercise, as Walking, Running, Leaping, Riding, Coughing, Sneezing, and inordinate Laughter: Consequently Rest, and an easy Position, must be obtained as far as possible, and Freedom from Passion, and every Disturbance of the Mind. This is so necessary, that perfect Cures have been wrought by Sickneses that have confined Patients to their Bed.

So much may suffice for a general Demeanor herein: *Under* The particular Cure comes under *three* Intentions.

The first, is a due Reposition of the prolapsed Part *three In-* into the proper Place; effected by softening and discharging the Excrements, by laying the Patient on his Back with his Buttocks raised; and then with fomenting warm Cloaths, and gently repressing it with your Hands; if it does not submit, Mr. *Wiseman* advises the putting him on the Back of a strong Man, with his Head downwards; but take care not to bruise, for fear of a Gangrene.

The second, is to keep it right when it is reduced; done by proper Bandage and Trusses.

The third, is to give a Contraction to the relaxed Parts; done by the Cold Bath; by astringent Fomentations, Cataplasms, and Emplaisters.

The Cold Bath, as it has proved of infinite Service in *Cold Bath* many Distempers, invigorating both Mind and Body; so *of Service* in *Ruptures.*

it will be particularly useful here in the relaxed, weak, and paralytick State of the containing Parts, provided due Regard be had to Age, Strength, and Time of Continuance in it.

Astringent and agglutinative Simples are, *Rad. Bistort. Symphiti, Tormentill. Osmund. Regal. Fol. Fragar. Millefol. Pentaphyll. Prunell. Tapsi Barbat, Equiset. : Burs. Pastor. Plantag. Sumach. Cort. Querc. Granator. Flor. Rosar. Balaust. Nuces Cypress. Lap. Hæmatit. Terr. Sigillat. Bolus Verus, Acetum, Oxycratum, Vinum rubrum, Aq. Fabror G. Arabic. Ammoniac. Tragacanth. Opoponac. Mastich. Thus, Aloes, Sarcocol. Ichthyocol. Terebinth. Gypsum, Farina, Amylum, Herniariam, Sang. Dracon.*

These may be variously used in Fomentations, Baths, Cataplasms, or Emplaisters: Your Emplaister, whether it be any Composition from these, or the *Ad Herniam* of the Dispensatory, should after Fomentation be applied with Compress and Truss, and left on for a Month, without removing.

Internally is recommended, *Troch. de terra Lemnia cum Carabe 3j. in haustulo Vini albi.*

Succ. Symphiti, vel tapsi barbat. ʒij. (vel Pul. Sigill. Solomonis ʒi.) in Vin. alb. sumend.

Rad. Sigill. Solomon. Symphit. maj. Sem. Anisi a. 3j. F. Pulvis ad herniam detur Infantibus ter in die ad gr. xv. Adultis ʒis. superbib. Decoct. Millefol. vel Symphit. haustum.

Father Cabriere's Secret was, *Sp. Salis bene rectificat. ʒis. in vino Clareto ʒij. de quo sumat haustulum (jejunio stomacho) pro tribus septimanis; and the following Emplaister.*

℞ *Pul Mastich. ʒss. Labdan. ʒiiij. Nuces Cypress. N^o iii. Hypocis. 3j. Pul. Rad. consolid. maj. ʒss. Picis nigri ʒij. Tereb. Ven. ʒj. M. F. Empl.*

Vigerius recommends *Cons. ros. rub. Rad. Symphit. a. ʒj. cort. Cydonior. Condit. ʒss. G. Tragacanth. Terr. Sigillat. Corall. rub. Pul. Herniariæ a. ʒss. Croc. Mart. Astring. Magnet. a. ʒj. cum sacchar. rosar. F. Conditum vel addito syr. de rosis siccis, cujus capiat ʒij. singulis Auroris superbib. haust. Vini.*

℞ *Conser. rosar. rub. Absynth. a. ʒj. Species Diarrhod. Abbat. ʒij. M. F. Conditum.*

Sir *Theodore Mayern*, Physician to K. Ch. I. recommends as a Specifick in these Ruptures *Lac Alumin*, made of *Spt. Vini*, and the White of an Egg beaten together with a Lime-stone, and applied with Linnen Bolsters to the Part. Also

R. Salviae Menth. Mvj. Veronicae Caryophyll. Chamæpitana Mij. bacc. Juniper ʒviij. Guaiac. ʒij. Sassaph. flaved. Citri. Aurantior a ʒj. coquantur in aqua & vino Canariense ff. expressis, & Clarificatio adde mellis despumat. & Sacchar. q. s. ff. Syrupus.

As *Ruptures* differ not only in the Part falling, but How to also according to the Place it falls to, and the Matter it reduce consists of; so it is evident besides general curative Intentions, there is required some Variety of Method peculiar to each.

First, Hernia Umbilicalis: *Ambrose Paræus* directs the Patient to be laid on his Back, and with Fomentations to repress the Caul, or Gut, with the Fingers: If it should not yield to this through its Largeness, or other Circumstance, then to take up the Skin round the Tumor; and having brought it between your Fingers, to make a strait Ligature on it with a Needle and Thread; to scarify the circumjacent Parts, and cut off what is without-side the Ligature. To this, if we add a quiet Posture and Regimen till a *Cicatrix* is formed, it is probable the muscular containing Part may contract, so as to keep the Internals restored. Mr. *Wiseman*, and others, for the larger Ruptures of the Navel, do, after Reduction, use a Bracer to lace on the whole Belly; under which a Bolster may be placed, of proper Dimensions, on the Navel, and under that an Emplaster *ad Herniam*. If the Skin should mortify through Neglect, Stitch, says he, the *Peritonæum par Gastroraphiam*. Tho' others, as *Fabricius ab Aquapendente*, will scarce allow the *Peritonæum* to be ruptured in *Hernia Omentalis*.

The Intestinal Rupture is more frequent than the former, and of worse Consequence. In order to Reduction, the Patient should be placed on his Back, with the Buttocks raised higher than the Head; then with warm Cloaths and Fomentations endeavour gently to repress; and that Part first which came out last, whether it be in

The Reduction of them.

Scroto

And pre-
serving
them,
when so
reduced.

Scroto, a *Procidetio ani*, or an *Exomphalos*, being very careful against rough Measures, which sometimes produce Inflammation and Gangreen.

In Children, the Impediments to Reduction, by the Softness of their Constitution, are easily superseded; an astringent Fomentation, a convenient Compress and Bandage, using all careful Means against crying and coughing, and resting the Child for some Days, (if possible on his Back, will generally bid fair for a Cure. But in Adults, the Case is altered: Violent Pain, Inflammation, and sometimes a speedy Death ensuing; and this never more frequently, than from a Plenty and Induration of the Excrements, the common Incentive of all those Symptoms, we denominate under the *Iliac Passion*, (a Distemper arising from an Inversion of the *peristaltick* Motion, and not any pretended doubling, twisting, or Inversion of the Gut itself;) for if a Stop be made in the Passage, whether by such Induration I have been speaking of, or a sudden Fluxion of Humours inflaming any Part of the Gut, (and especially when displaced,) what must the Consequence be but acute Pain, a Return of every Thing upwards, *Languors* and *Syncope*? For relieving these, and softening the indurated Excrements, Embrocations of emollient Oils may precede, and then carminative Clysters, Fomentations, and Cataplasms, renewing them often.

℞ *Ol. Lillior. rosar. a. p. æ. Or, Vini Canariensis cum Oleo Nucis.*

℞ *Althææ Malv. Fol. Origan. Calamenth. Summit. Anethi a Mj. Sem. Anisi ʒij. Flor Cham. Melilot. Samb. a. p. æ. F. Decoëtio ad ℥ij. in qua dissolve Diaphen. ʒj. pro duobus Clysteribus.*

Eodem decoëto cum vino foveatur pars tumefacta, ex facibus, seu Magmate F. Cataplasma. Addendo farin. Lini. fœnugræc. Axung. Porcin. & Butyri recent.

℞ *Rad. Althææ Lillior a. ʒij. Sem. lini fœnugræc. a. ʒij. Fol. Mal. Violar. Parietar. a. Mj. Coquantur in Aq. commun. postea tundantur & trajiciantur per setaceum addendo Butirum sine sale. Ol. Lillior. q. s. Fiat. Cataplasma calide Scroto & Regione Hypogastri applicand.*

If the Clysters come off without Effect, and the same Means already mentioned are ineffectual to Reduction, it is a Practice to enlarge the Rings of the Muscles (where the Stoppage usually is) by Incision, which need not extend to the *Scrotum*, unless the prolapsed Parts adhere there; not even when the Pain and Induration are observed to increase, and the Danger more imminent. Authors go farther, and prescribe the *Punctum Aureum*, as some others have done an actual Caustery, or *Causticum Medicamentosum*, to compleat a Cure.

The *Punctum Aureum* being neither very common or safe, should be undertaken only in extream Necessity, warily, and at the Importunity of the Patient. An ingenious Author thus describes it: You are to make, says he, your Incision on the *Os Pubis*, so that you may pass a Director under the Process of the *Peritonæum*, according to its Rectitude: Then having raised it up, separate it from the Fibres and nervous Bodies, to which it adheres, being particularly careful in removing the *Vasa Spermatica* and *Cremaster* Muscle, without hurting them. That done, take hold of so much of the Process as is now loose, with a Pair of Forceps and pass it through with a Needle and Thread five or six Times double, as close to the *Spermaticks* and *Cremaster* Muscle, as may be done, without molesting them. Lastly, pass through the Middle of that Part of the Process which remains without your Forceps, and take up the Lips of the Wound together with it, draw a strict Knot, and leave the Ends hanging out at the Wound, till they drop off themselves, and that is agglutinated. *Non temere, (says Celsus) nec nimis cito, ad Sectionem veniendum, quia sæpe præter spem Hernia curatur.*

Another eminent Professor has it thus: In order, says he, to make Incision, place the Patient on his Back, draw a Line with Ink according to the Length of the Tumor; take the Skin up at one End with your Left Hand, while an Assistant does the same on the other, and observing the Rectitude of the Folds of the *Inguen*, divide the Length of the Line with Care, that the *Peritonæum* or Intestine be not touched.

When Way is made to the *Peritonæum*, and the prolapsed Parts repressed by gentle Degrees into the *Abdomen*, he takes off some of the relaxed expanded Processes,

cesses, and uses a Cautery or two, till its pared to the Bone, guarding with great Caution the *Spermatick* Vessels from being touched. The *Cicatrix* from this Wound contracts the Passage, and consequently hinders the Descent of the Intestines.

Another thus,——When Symptoms grow dangerous from Ruptures unable to be reduced, such as rejecting the Excrements by Vomit, Inflammation and Hazard of Mortification, then for Relief we should attempt the Operation.

Place the Patient on a Table, and make an Incision on the upper Part of the *Scrotum*, without hurting the Intestine; then passing a Director into the Incision, with a Knife, enlarge the Rupture sufficiently to replace the Intestine; sew up the Wound, taking so much of the *Peritonæum* as may hinder any thing from falling down when the Wound is healed.

Mr. Cheselden, in his high Operation, takes notice, that when Ruptures in *Scroto* could not be reduced, he has made a large Wound in the Bottom of the *Abdomen*, and easily done it.

Others direct the Incision (when necessary) to be made two Fingers Breadth above the straitned Intestine, that it be not hurt; that done, turn the Patient on the other Side, that they may be removed from the Place of Incision; after this cut into the *Peritonæum*, and thrust your oiled Fingers into the Wound, gently moving the Intestine by little and little, beginning always at that Part first which came out last, until the whole is replaced. If the Quantity down should require the *Aperature* to be enlarged, let it be continued to the straitned Place, and a Director on your Finger to secure the Gut from the Knife: If stretched with Wind and so an Impediment to Reduction, let it out by *Acu-puncture*, and when reduced stich it up as in other Wounds of the *Abdomen*.

These Cures by Section seem to have been more in use anciently before Trusses were invented, a Palliative that most ruptured People now content themselves with, and in the general, is preferable to the Operation; the more so, because the Induration of Excrement in that Intestine, the Inflammation and Pain about the Parts consequent thereto, are found under a careful Management

ment to submit to Baths, Ointments, Fomentations and Cataplasms, without the Operation, and when this, no more than that cannot promise always Success, the lesser Evil is the better Choice; besides, they are sometimes of more Service and can help when the other is impracticable, as in Inguinal or Scrotal Ruptures, proceeding from a Distention only of the *Peritonæum*; or, when the Intestine descends through that Space, between the Muscles *Pectineus* and *Sartorius*, where the *Crural* Vessels pass, of which there are several modern Instances forming a *Bubonocèle*.

I have never seen this Operation, the Palliative being all that has fell within my Cognizance, or probably may with others in the Navy; yet thought it not improper to transcribe thus much, for those who may aim at greater Improvements.

To check the Inflammation that may arise on this Operation, the Tumor should be moisten'd with *Oxycrate ex Aq. Lactucæ Cochlear. vj. Acetum ros. Coch. i.* and lay on the *Ceratum Galeni. viz.*

℞ *Ceræ Alb. ʒij. Ol. Rosar. Omphacin. ʒiij. Conquassentur cum modico clari & albi aceti ut F. Ceratum.*

Though Ruptures are properly of the Intestine, or *Pneumomentum*, (and perfect only when in *Scroto*,) yet there are four other Tumors in this Part, which from a Resemblance have obtained the Name of *Herniæ*. The *Ventosa* and *Aquosa* are two of Affinity with each other, and shall be considered with some Distinction.

The *Ventosa* is most frequent in Children; of sudden Growth, round, and affecting different Parts of the *Abdomen*, but chiefly the Testicle, being contained within the *Tunica Vaginalis*, and in such Case approaches towards the Shape of it.

They are generally of easy Cure, it consisting in discutient Fomentations, gentle Laxatives, avoiding all Things flatulent, an *Empl. e Cymino, vel e Baccis lauri*, and a Bag-Truss. This only is to be observed, that when the Tumor is very tense, your Compression and Bandage should be less strait, for fear of exciting Pain and Inflammation.

Etmul-
ler's Fe-
mentation.

℞ *Flor. rosar. r. Hypericum. Cham. a. Mj. Cort. Granator. vel querc. Gallar. Nuces Cypress a ʒj. coquantur in Aq. Fabror. vel Calcis liv. ad medieta-tem Addend. sub. fin. Alum. roch. ʒij. S. V. ʒiv. F. Fotus.*

℞ *Stercor. ovalis q. v. Coque in lacte Vaccin. q. s. & Cola. Valet, (says Fuller) cum intestin. flatu disten-tium, aut induratis fæcibus infarctum vix reduci potest.*

℞ *Fol. Verbasci Althæ. Flor. Cham. rosar. rub. a ʒij. Farina fabarum, Orobi. sem. Dauci. Cymini, Carui a ʒj. Bacc. Juniper. Lauri a ʒis. Summit. Rutæ O-rigan. a Mj. F. omnium Pulvis, & cum lixivio & vino rubro F. Cataplasma.*

℞ *Empl. Diachyl. cum G. ad Strumas. Cymini a ʒj. li-quatis adde Terebinth. Cypri. ʒi. Ol. Hiper. ʒij. Pul. Rad. Iridis ʒij. Argent. viv. Axung. Porcin. a. ʒi. M. F. Empl. Scroto Adulorum Applicandum.*

It is always supposed after the Use of Fomentations, that a Stupe wrung from it, an Emplaster, or a Cata-plasm be retained on with a warm Bag-Truss, and the Person recommended to a quiet Posture, and regular Course of Life inwardly.

℞ *Aq. Carminat. vel Chamæm. Comp. ʒiv. Sp. Cymini. ʒis. Juniper. ʒiv. Essent. Cort. Aurant. Citri. a ʒj. Essent. Opii. ʒj. Ol. Puleg. Gut. xij. M. hujus de-tur ʒis. in Vehiculo p. valet etiam in passione Colica, Historica, & torminis Intestinorum.*

The watry
Rupture.

The *Hernia Aquosa* is an *hydropical* Tumor, posses-sing, or contained between the Membranes of the *Scro-tum* or Testicle, or both; generally *Anasarcous*, i. e. bred *ab extra*, from a Poverty of the Blood; whence its *Compages* is loose and watry, emitting the Serocity on a Part weakened by some precedent Irregularities; and that it is thus, and not from any Lapse of Water out of one Cavity into the other, is plain from our Ob-servations on dropical People; who, although the Tumors be very large, yet if the inner Membrane of the

the *Peritonæum* continues whole, let not any Water downwards: And also that this Tumor frequently arises here, when no Part of the Body else appears Hydropical.

The beginning Tumor, and in young People, is very likely to resolve and dissipate, with Bleeding, Purges, a Bag-Truss; an assiduous Use of discutient Fomentations; Cataplasms, and a good Regimen.

The Fomentation may be made, *Ex floribus Balaust. Rosar. Nuces Cupress, &c.*

℞ *Sem. Cymini Anis. a ʒij. Alum roch. ʒj. Cort. Querc. Granat. a ʒj. Coq. in vin. rub. & Aq. Fabror a ℥l. Fiat Fodus ope Pannorum applicand.*

The Cataplasim, *Ex farinis Hord. fabar, &c.*

℞ *Fol. Hyosciam. Cicutæ. fol. Malvæ Flor. Cham. a Mj. Rad. Bryon. Lillior. a ʒiv. sem. lini fenugræc. a ʒij. coquantur in brodio ex Capit. ovinis F. Fodus. Ex Fæcibus Fiat Cataplasma cum Medul. Pan. tritic. Mell. Commun. & Axung. Or instead of these, the Prescriptions under the Head of Hernia Ventosa.*

Cataplasms, I take it, are most effectual for resolving these incipient Tumors; because the *Membrana adiposa*, being wanting in *Scroto*, the Coldness of the Part is a sufficient Check to Dissipation; nor can that Impediment be overcome by Application less retentive, or less communicable of Heat, than they are.

They will be of greater Estimation in the increased Tumor, whenever it shall be thought necessary to give a Vent by Blister, or a superficial Seton, especially the last; (which is urged as a preferable Practice, when the *Hypogastrium* is *anasarcous*; because the copious Discharge it makes, keeps off a Load from the vital Parts;) for opening such cold Tumors, and in such cold membranous Parts, will ever give great Jealousy of an Extinction of Heat; which no Applications whatever are more likely to conserve, than Cataplasms.

But when the Tumor is so increased, as to want external Operation to discharge the Contents of it, Incision,

sion, by Lancet or Knife, is the common and approved Practice: Causticks are less eligible; because, as I observed, the fatty Membrane is wanting.

Precautions to be used.

The *Prærequisites* to this may be, *First*, in respect to Time. That is properest for Apertion in Adults; when the Tumor is judged to contain upwards of a Pint of Water; less may make you fearful of hurting the Testicle; and a very large Quantity (for I have heard of seven Pints, and more, being let out in a Day) hazards more imminently the Mortification, by the Lapse and greater Flaccidity of the Membranes on its Discharge. *Secondly*, It may be observed, that one Puncture is sufficient, when the Water is without the Testicle, or contained in a *Cystis*; but a double Opening will be required, should there be any Water contained within the *Tunica Vaginalis* of each. *Thirdly*, You are immediately after Opening to thrust in the *Canula*; for when the *Scrotum* is as yet distended, the Membranes composing it answer to one another in the Orifice; which will not so easily be when flagg'd, nor so promotive of the Discharge. *Fourthly*, it may be considered, That if a Flux of Blood should happen from wounding some small Vessels in the Puncture, the *Canula* should be withdrawn, and Compresses spread (to restrain it) with Wheaten Meal beat up with the Whites of Eggs. But herein be not too credulous; for a very small Matter of Red gives Tincture to the *Serum* in this Operation. *Lastly*, Chuse a depending Part, (not on the Seam,) and then steadying the Whole, thrust your Lancet in, and make an Orifice of a fit Capacity to receive the *Canula*, which ought immediately to follow, and be continued there until the Water is all drawn off; most conveniently done at once; unless the Quantity be very large, and the Patient in any weak or ill Plight of Health; and then it is better at two or three Times in the same Day.

The Dressing need be no more than a Pledget spread with some Digestive, an *Empl. e Bolo*, a *Cataplasma. ex farinis*, and a Bag-Truss, fomenting at each subsequent Dressing. The Orifice soon heals; and then it would be necessary to add a Purge or two, and prescribe a dry Dieting and Course of Bath-Waters; for even under

der the most cautionary Methods, they frequently fill again in a Year or two.

Fabricius Hildanus, on this Head, says, the *Hernia Aquosa* is sometimes Complicate, *i. e.* sometimes the Intestines, and sometimes a *Sarcocoele* intermixes; Flesh growing, and hardening, through want of Heat, to the Testicles, and their Tunics to a great Bigness; advising from the cancerous Nature of these latter Tumors to extirpate, unless the Root extend to the Process, or is communicable with any Part of the *Abdomen*, which then to do, he says, would be mortal; and gives an Instance, wherein he attempted by Incision to discharge the Serosities in the distended *Scrotum*, of such a complicate *Sarcocoele*; and the Consequence was an Increase of the Pain, Inflammation and cancerous Malignity. His Advice is not so judicious in another Place, where he talks of long thick Tents, and continued for the Space of two Months in one of these watry Tumors he had opened, contained within the *Tunica Erythroides*.

The two other Tumors peculiar to the *Scrotum*, are the *Sarcocoele*, or *Hernia Carnosa*, and the *Circocoele*, or *Hernia Varicosa*, of some Affinity also, as having probably the same Original: But I shall chuse to distinguish them by the one being a gelatinous Humor, or *Fungus*, that over-spreads the Testicle, and commonly takes its Rise from some external Bruise: The other, a Distention of the seminal Vessels, and as commonly arising from the indiscreet stopping of a virulent *Gonorrhœa*.

The two other Tumors peculiar to the Scrotum.

If Cheque be given too soon here, nothing is commoner then the Matters reverting on the Testicles with Pain and Inflammation, which the natural Coldness of the Membranes, and a want of Fat, inclines to putrify and corrupt.

In the Beginning they are both curable; the former, by discutient Fomentations. *Riverius* says, he cured one to the Bigness of his Head, with the following Cataplasim:

The Prog- nostick upon them.

℞ *Farin. Hord. & fabar. sem. Cymini. flor. Cham. Melilot. & rosar. Pulsat. cum Oxymel. coquantur ad Cataplasma.*

sion, by Lancet or Knife, is the common and approved Practice: Causticks are less eligible; because, as I observed, the fatty Membrane is wanting.

Precautions to be used.

The *Prærequisites* to this may be, *First*, in respect to Time. That is properest for Apertion in Adults; when the Tumor is judged to contain upwards of a Pint of Water; less may make you fearful of hurting the Testicle; and a very large Quantity (for I have heard of seven Pints, and more, being let out in a Day) hazards more imminently the Mortification, by the Lapse and greater Flaccidity of the Membranes on its Discharge. *Secondly*, It may be observed, that one Puncture is sufficient, when the Water is without the Testicle, or contained in a *Cystis*; but a double Opening will be required, should there be any Water contained within the *Tunica Vaginalis* of each. *Thirdly*, You are immediately after Opening to thrust in the *Canula*; for when the *Scrotum* is as yet distended, the Membranes composing it answer to one another in the Orifice; which will not so easily be when flagg'd, nor so promotive of the Discharge. *Fourthly*, it may be considered, That if a Flux of Blood should happen from wounding some small Vessels in the Puncture, the *Canula* should be withdrawn, and Compresses spread (to restrain it) with Wheaten Meal beat up with the Whites of Eggs. But herein be not too credulous; for a very small Matter of Red gives Tincture to the *Serum* in this Operation. *Lastly*, Chuse a depending Part, (not on the Seam,) and then steadying the Whole, thrust your Lancet in, and make an Orifice of a fit Capacity to receive the *Canula*, which ought immediately to follow, and be continued there until the Water is all drawn off; most conveniently done at once; unless the Quantity be very large, and the Patient in any weak or ill Plight of Health; and then it is better at two or three Times in the same Day.

The Dressing need be no more than a Pledget spread with some Digestive, an *Empl. e Bolo*, a *Cataplasma. ex farinis*, and a Bag-Truss, fomenting at each subsequent Dressing. The Orifice soon heals; and then it would be necessary to add a Purge or two, and prescribe a dry Dieting and Course of Bath-Waters; for even under

der the most cautionary Methods, they frequently fill again in a Year or two.

Fabricius Hildanus, on this Head, says, the *Hernia Aquosa* is sometimes Complicate, *i. e.* sometimes the Intestines, and sometimes a *Sarcocoele* intermixes; Flesh growing, and hardening, through want of Heat, to the Testicles, and their Tunics to a great Bigness; advising from the cancerous Nature of these latter Tumors to extirpate, unless the Root extend to the Process, or is communicable with any Part of the *Abdomen*, which then to do, he says, would be mortal; and gives an Instance, wherein he attempted by Incision to discharge the Serosities in the distended *Scrotum*, of such a complicate *Sarcocoele*; and the Consequence was an Increase of the Pain, Inflammation and cancerous Malignity. His Advice is not so judicious in another Place, where he talks of long thick Tents, and continued for the Space of two Months in one of these watry Tumors he had opened, contained within the *Tunica Erythroides*.

The two other Tumors peculiar to the *Scrotum*, are the *Sarcocoele*, or *Hernia Carnosa*, and the *Circocoele*, or *Hernia Varicosa*, of some Affinity also, as having probably the same Original: But I shall chuse to distinguish them by the one being a gelatinous Humor, or *Fungus*, that over-spreads the Testicle, and commonly takes its Rise from some external Bruise: The other, a Distention of the seminal Vessels, and as commonly arising from the indiscreet stopping of a virulent *Gonorrhœa*.

If Cheque be given too soon here, nothing is commoner then the Matters reverting on the Testicles with Pain and Inflammation, which the natural Coldness of the Membranes, and a want of Fat, inclines to putrify and corrupt.

In the Beginning they are both curable; the former, by discutient Fomentations. *Riverius* says, he cured one to the Bigness of his Head, with the following Cataplasma: The Prog-
nostick up-
on them.

℞ *Farin. Hord. & fabar. sem. Cymini. flor. Cham. Melilot. & rosar. Pulsat. cum Oxymel. coquantur ad Cataplasma.*

The other termed at first *Hernia Venerea*, frequently resolves, by forcing the Running again through the *Penis*, or failing there, disperses by Salivation: But as Negligence in the Patient, or want of Skill in the Surgeon, may lose the Opportunities of retrieving Mistakes, these Tumors frequently harden into the Nature of a *Schirrus*, *uneven under very imperfect Degrees of Sensation, adhere firmly to the Membranes of the Testicle, or Testicles, and is then the confirmed and true Sarcocoele*; incurable but with Extirpation; and admitting only of such palliative Chirurgical Help as will conduce to mitigate Uneasiness, hinder the farther Growth, or qualify other untoward Circumstances to the Patient's Convenience, as may from Time to Time occur.

Fabrick. Hildan, having given four several Instances of the *Sarcocoele*, (Cent. IV.) in the Right Testicle, says, they have all the Nature of a *Schirrhus*, and that he never met with more than one in the Left; and that proved cancerous and mortal.

Sarcocoele, In the *Sarcocoele*, we repeat Bleedings, gentle Purges, *the Means* try an Issue on the Inside the Thigh, emollient Embrocations and Fomentations, a warm Stupe wrung out of *to be taken* *Sp. Vini*, or an Emplaister. *with it.*

℞ *Emp. Vigonis cum Mercurio quadruplo ʒij. Diachil. Ireat. ʒiij. Gum. Ammoniac. solut. in succis Hyosciam. & Cicutæ ʒj. Pul. subtilis Rad. Scrophular. Gladiol. a. ʒss. Camphor. ʒj. Ol. Catellor. q. s. F. Emp. continuo gestandum cum fascia.*

Internally, medicated Ales from *Sassaphras, Sarsap. Scrophular. Salvia, Mentha Lig. juniper. Guaiacum, China, Santal.* and the like; giving every Morning *Pul. Rad. Ononid. ʒj. in hausto Vini Amari.*

If the Tumor does not tend to Suppuration, or the Patient cachochymious; Chalibeats, Mercurials, Mineral Waters, and the following *Suffitus* may contribute towards the Dispersion and Waste of it.

℞ *Thuris Mastich. Sandarach. a. ʒj. Colophon. ʒij. Syrac. Calam. Benzoin. a. ʒss. Camphor. ʒj. Cinnabar. ʒiss. Antimon. Crud. ʒiij. Alcohol. & cum Tereb. q. s. fiant Trochisci pondere ʒij. vel ʒiij. fumus*

excipiatur in fella perforata bis in die, Cavendo ne quid exhalet.

But the longer the *Sarcocoele* has continued, the un-
safer it will be to make trial of other than the mildest
Palliatives, lest we renew the Disorders that first gave
Rise to it; for if Pain and a new Fluxion should seize the
Part, it almost infallibly mortifies; and then nothing
remains but Extirpation; which cannot have the desired
Success, if the Tumor have any Communication with the
Parts within the *Abdomen*, and that is to be suspected if the
Tumor has advanced and seized the Inguine; if then
you should extirpate, (Authors tells us) and leave the
least Remains, it would soon increase to a great Bulk.

*Extirpa-
tion of a
Testicle.*

To perform the Operation, (attempted only when the
whole Substance with the Testicle may be clear re-
moved,) you are to make Incision to the Tumor, and
extend it above the affected Testicle, that so a Needle
with strong Thread may be passed conveniently through
the Process, a first and second Time for Ligation:
When clearing the Testicle from the *Scrotum*, you may
bring that, or the Vessels, and part of the Process with-
out the Ligature away, leaving the Ends of the Thread
out to digest off. The Dressing may be an Egg, or two,
beat up with Rose-Water, and a little *Pulvis astringens*,
or warm *Ol. Tereb.* a thick Compress spread with Cata-
plasm, and a proper Bandage. Internally, gentle Pur-
ges *Manna* and *Cassia*, and a medicated Ale, or *Hydro-*
mel; with *Rad. Emulæ Scrophular. Sassaaparill. Menth.*
Salvia, Santal. Citri. Lig. Juniper. Guaic. adding *Squam.*
ferri.

℞ *Rad. Chim. ℥j. Sarsæ ℥ss. Sassaaparill. ℥iv. Nuces*
Moschat. N°. vi. Succ. pomorum redolent. ℥vi. Succ.
Cochlear. Nasturtii. Baccabung. a. ℥iiss. Cerevis. lu-
pulat. fort. ℥xij. Fiat. Cerevisia addendo battitura fer-
ri ℥x. nodulo incluso.

Fabritius ab Aquapendent. in Circocoele, (Varicosa) says,
the varicous Vessels must be touched with Cauteries, and
then with Digestives, to bring off the Eschars.

If manual Operation is wanting, make an Incision
of about two Finger's Breadth in the *Scrotum*, to the

varix pass your Needle with a double Thread under the Vein so as to compass the Roots; then again, the same at an Inch Distance below the first, only before you fasten this last Ligature open the varicose Vessel to let out all the Crass Blood; then dress and heal as in like Wounds.

If the Varices are in the inner Membrane, says he, an Incision must be made *in inguine*, where you are to draw forth the Membrane with the Testicle, and separating the varicose Vessels with your Fingers put in the Membrane and Testicle again—If the Varix be in the *tunica Vaginalis*, act in like manner. For an Inflammation and Tumor of the Testicle, *V. S.*—*Catharticks*.—A slender Diet, Anodyne Discussives with some Repellents.

℞ *Farina Hord.* ʒij. *fabarum.* ʒj. *coquantur in Posca ad formam Pultis in fine admissæ pul. rosar.* ʒj. *post unicam ebullitionem amotis ab igne admissæ vitellum & albumin. Ovi. j. Ol. rosarum parum F. Cataplasma.*

Circocele,
Means u-
sed with
it.

I should take no further notice of the *Circocele*, whose Intentions of Cure are equally comprehended in the former; only for this Peculiarity by some, that they are what *Varices* are in other Parts of the Body; a *Distention of the Vessels from feculent Blood*, and propose Incision, Ligatures, and opening the *varicous* Vessels as in other Places; *Si aliqua vasa testem Nutrientia fuerint facta Varicosa, ea solum modo resecanda & separanda teste opposito:* But this Destitution of Vessels probably withers the Testicle, though the Operation be easy and successful in the *Scrotum*: But when the *Circocele* is allowed to be a Tumor affecting the seminal Vessels, then it cannot be done without the greatest Danger; at least, such Attempt must prove of worse Portent and Consequence, than the resting satisfy'd with Palliatives, Diet, repeated Purging, Venesection, astringent Topicks, to repel the influent Humour, proper Trusses, and Bandage.

OBSERVATIONS.

Blegni tells you of a Person labouring under an Abscess in *Inguen*, attended with great Putrefaction, and that

a Portion of the *Ilium*, four Inches long, suppurated; and although the Excrement came that Way, and the Patient sixty Years of Age, was cured. Of another, which was a compleat *Enterocoele*, not to be reduced; but the Matter of the Intestine was brought to Suppuration with the Production of the *Peritonæum*, even in the Intestine itself; the Extremity of the last agglutinating to the Circumference of the Aperture of the Abscess, and so could not be closed by Suture. Some again, have had three *Herniæ*, viz. of the Navel, and one in each Groin.

Fabricius mentions a monstrous *Exomphalos* in a Woman of fifty Years of Age. In another a ruptured Navel; at which came forth Part of the Intestines, as well as *Omentum*, occasion'd by difficult Labour.

A Gentleman of Seventy-three Years of Age, who for Thirty-five of it last past, had felt a Tumor in the Right *Inguen*, gradually increasing to the Bigness of a Pigeon's Egg, without any great Pain; and that twenty Years after the Appearance of the first, came another Tumor in the Left Groin, soon exceeding the other in Largeness, and by the Increase of both, the *Bubonocoele* came to an *Enterocoele*, with a great Tumor of the *Scrotum*: He notes, that on the Right Side could be repressed by the Hand, the other not: On which he argues, the former must be intestinal, or omental; though by so long Continuance, and often Reduction, some Tumor were still left from the frequent stretching of the Parts; and that the other on the Left Side, which would not be repressed, must be one of those peculiar to the *Scrotum*, (*Aquosa*, he thinks,) and observes, from such a *Hernia*, that strict Ligature, or Bagging up, is hurtful; and also that the Weight of the Water, by Means of the *Musculi recti*, inserted at the *Sternum*, and Cartilages of the *Costæ Nothæ*, will sometimes effect a Straitness of Breathing.

In another Place, he gives an Account of an *Enterocoele*, from a Dilaceration of the *Peritonæum*, and the Gentleman being negligent of his Truss, in riding, it slid down and became very troublesome, with Inflammation and great Pain through the *Abdomen*, as well as Rupture. " The Intestine, says he, was now in *Scroto*,
" stuffed

R U P T U R E S.

“ stuffed with Excrement ; Clysters he threw up at his
 “ Mouth, and the Symptoms increased with greater Se-
 “ verity ; till emollient Cataplasms having laid an Hour
 “ or two, and the Patient in a quiet Posture, it submit-
 “ ted to a gentle Handling, and was returned : Broths
 “ and composing Draughts fitting him for the Use of the
 “ Trufs again.”

A Woman also troubled with grievous Torsions in the Belly and Stomach, with Vomiting, Watchings, &c. throwing up all Clysters at her Mouth : On Enquiry, it was found that some Months before, she had a Tumor in *Inguen* ; which in six Days increased to the Bigness of both Fists, and was a Rupture of the *Peritonæum*, through which the Intestines with their Excrement had fell, not to be easily returned. In order to it, he fomented with a Decoction of Mallows, Chamomile, Linseed, &c. making up the *Fæces* and some Sheeps Dung into a Cataplasm, and renewing it on the Part every Hour for a whole Night ; which so supplied them, that in the Morning the Gut was repressed, the Excrement came off with a Clyster, and she recovered.

Another, on a Strain, felt the *Hypogastrium* crack, and the Intestines to slide into the *Scrotum* ; which not being able to reduce, threw him into an iliack Passion, and next Day was troubled with continual Eructations and Vomiting, Costive, and his Urine passed with great Difficulty : The Symptoms increasing, and Clysters being thrown up at his Mouth, with much Bile and Excrement, gave little Hopes of his Recovery, dying on the fourth Day. On opening his Body, the Ilion was found in *Scrota* livid, and in the Beginning of the Process, above the *Os Pubis*, was found a spongy *Fungus* involving the Intestine, and adhering to the Membranes, which he judges arise from the Blood, effused at the first Day's Hurt.

He gives likewise an Account of a Cooper's Wife, who, helping her Husband in his Trade, received a Blow in her left *Inguen*, by which the *Peritonæum* was ruptured : She had a large Tumor there, increasing so fast, it could not be retained within the *Abdomen* ; and being with Child, the *Uterus* was distended, and there-
 with the Skin of the left *Inguen* so stretched, the Child
 might

might be felt pendulous. However, she went her due Time; but the Child had a *Cæsarian* Birth, which the Mother was in a fair Way of recovering, till being seized with a *Syncope*, rather for Want of necessary Supports, than any thing else, died suddenly.

All other Authors on this Subject frequently abound with such like Cases: Ruptures, that not being timely reduced, or neglected, have fell into the *Scrotum*, where the Excrements hardening, Gripes and iliack Passions have followed, or an Inflammation, Vomiting, Suppression of Urine, Watchings, Singultus, Languors, Death. Uteri & Ani Prolapsus.

In a Chapter of *Ruptures*, I could not pass by those of the *Uterus* and *Rectum*, which I think may more properly be called *Herniæ*, than either of the four last Tumors in *Scroto*.

The *Prolapsus Uteri* take their Rise from hard Labour, Indiscretion of a Midwife, or Weakness of the Woman from an immoderate Flux of the *Menses*, Humidity, relaxing the Parts, or, lastly, from rough Handling; but in all these Cases, the Hurt may extend no farther than the inner Membrane of the *Vagina*; what is commonly reputed the falling of the Womb, being nothing more than a Relaxation and Extention of that Membrane. The Curs.

In order to Reduction and Cure, bleed and empty the Bladder, and *Intestinum Rectum* by a Clister; then place the Patient on her Back, with the Hips raised, as in other Ruptures, and with warm Cloaths, or Stupes out of warm Wine and Water, (or other Fomentation,) endeavour by gentle Pressings to restore it: If too deep for your Fingers, it may not be amiss to use a Stick, armed with Linnen, of a proper Size.

When the Womb is replaced, nothing better contributes to the Retention of it, and recovering the Laxity of the Parts, than keeping the Woman in Bed on her Back, (if possible,) and quiet, her Legs a-crofs and raised: And when a Flowing of the *Lochiæ*, or *Menses*, do not forbid, use the following astringent Injection, and a Sponge wrung out of the same to keep in *uteri Vagina*.

R U P T U R E S.

℞ *Rad. tormentill. cort. Querc. a ʒi. Absynth. Salviae Menthae a Mij. Flores Rosar. balaustior. a Mj. Alum. ust. Sulphur. ʒij. Coque in Aq. Fabror. Cong. Colaturæ adde Vini Clareti ℥ij.*

If these Tumors have been of considerable standing, and through the Indisposition and Weakness of the Woman, are easily apt to prolapse, she then requires to be put under a Course of *Decoct. Guaici Sarsæ. &c.* and to adhere to a long continued Use of a Pessary.

Fabricius Hildanus orders them of Cork, ovally or spherically shaped, and to be spread with the following.

℞ *Ceræ novæ ʒiij. Colophon. G. Elem. a ʒj. Tereb. ʒiv. Pul. rosar. r. Myrtillor. Balaust. Rad. Consolid. Maj. a ʒj. Mastich. Oliban. a ʒi. Misceantur cum Oleo rosar. qs. F. ceratum.*

Or, ℞ *Fol. Plantag. salic. Mespilor, querc. prunor. sylvestr. summit. rubi rosar. a Mj. Rad. tormentill. bistort. symphit. a ʒj. Balaust. nuces Cupress. a ʒi. sem. anisi ʒis. incidantur & contundantur omnia crasso modo pro Sacculo intertexto.* Or a rolled Piece of Flannel of the like Figure, and covered with Silk, dipped in some astringent Decoction, and kept on with a Compress and the T Bandage.

Prolapsus
Ani.

A *Prolapsus Ani* is what we meet with frequently, and is more troublesome than dangerous; it proceeds from hard Straining at Stool, Laxity of the *Sphincter*, too much Serosity in the intestinal Glands or Fluxes of the Bowels, where the Acrimony, as well as Moisture disposes towards it, and oftentimes is a Consequence of the *Hæmorrhoids*.

Prognos.
tick.

The longer the Intestine has been down, the less able it is to contract, (or be reduced,) the external Cold weakening that Property, and tumifying the rugous Coat of the Intestine, then thrust outwards.

Reduction.

Reduction may be obtained after the same Manner as the *Uterus*, viz. by a Clyster, warm Stupes, or Spunges wrung out of an astringent Fomentation, Forge-Water, or Claret heated; but when the Cause is from a *Diarhæa*, a *Dysenteria*, or the *Hæmorrhoids*, respect must be had

R U P T U R E S.

221

had to those Distempers, before these external Means can effectually prevail.

℞ *Masticb. Thuris a ʒiſ. cort. Granat. ʒj. nucis Mosch. Cynamon ʒi. F. Suffitus.* To which may be added a Milk Diet and Absorbents.

When long prolapsed and exposed to more Cold than is natural, it swells and looks towards a Mortification, requiring a more assiduous Use of strong Fermentations, slight Scarifications, hot Stupes with Ther. Androm. or Pultices to renew often; keeping all close with the T Bandage.



XVII. *Lues Venerea.*

The Original of the Lues.

SOME say *Columbus's Sailors* transported the *Lues* to *Europe*, and was spread to *Morocco* by the Banishment of the *Jews* from *Spain*; *A. D.* 1492. Others derive the Original from the Siege of *Naples* by the *French*, 1494, thence calling it the *French*, and sometimes the *Neapolitan Disease*, must only mean that it received its present Name there; that it became more common, or that luckily about that Time some Remedy was found better adapted to its Cure than any before known: For no doubt it reaches in Antiquity the first Ages, as antient as corrupted Nature, it being irrational, either to suppose a World drowned for their Sins, Strangers to the Vice that contracts it, or that their Wickedness any more than ours deserved Exemption. No; Providence, we may safely believe, stamped an immediate Punishment on this, as on all other Intemperance and Sin, *ab Origine*, that the Pains and Sufferings succeeding a vicious Course of Life, might, if nothing else would, restrain us to Virtue, and be both a natural and moral Good to us. We find *Moses* describing a Leprosy, *Levit.* 13, 14. that corresponds with the Symptoms, and seems to have been a Species of this Distemper; so does the Difficulty of the Cure, *Deut.* 28. where it is said, *The Botch and Scab of Egypt, of which thou*

* *Boccalmi introduces Columbus, Cortez, &c. petitioning Apollo for Immortality on their Discovery and Conquest of America, bringing home Gold and Silver; but Molza stood up with his Hair peeled off, his Nose fallen, and covered with Blotches against it, saying, these also, with other Evils, came from America; on which the God ordered the Petition to be withdrawn immediately*

thou canst not be healed, and those many Laws found here relating to a *Leprosy*, would suffer a greater Disappointment than seems intended, as well from the Obstinacy, as Infrequency of the Distemper, if applied only to what we now strictly understand by that Term: The same may be said of many antient physical Authors, who, with the like or greater Plainness, have described the Symptoms, though not under the modern Titles.

In the Prosecution of this Subject, I propose to set forth the Nature and Manner of Infection, in all those Symptoms commonly understood by a Clap, viz. the *Gonorrhæa*, *Chancre*, *Phymosis*, &c. and then exhibit a Method of Cure; mentioning the Symptoms occasionally under either Head, as they serve to enlighten each other. And, first,

The *Gonorrhæa* is benign or malign: The first Sort is an Emission of Humour, from the *Glandulæ prostaticæ*, a Weakness only, and commonly proceeding from great Strains, and where the natural Strength has been too far exerted in any sort, whether by Labour or Venereal Pleasures; it has its Symptoms, as well as Process of Cure very different from the malignant, which is the present Subject of my Enquiry, and that under two Heads.

First, *By shewing how either Sex becomes infected.*

Secondly, *A Cure for that Infection.*

And, 1. The Woman I look on must be primarily and originally infected, that is, *sine amplexu infecto*, to introduce the being of this Distemper in the World: For let a Man correspond with what Variety he pleases, (provided they are sound,) he receives no Malignancy; which could it be so with her, I cannot see why we ever should thus unhappily have had its Knowledge: But Experience too fatally contradicting this, is a Conviction, that her Coition with Numbers has first of all, and probably does still, at sometimes effect the same, as at other Times Communication with an infected Person. And this I shall endeavour to make out in a few Words.

Such who say the promiscuous Mixture of different Sperms excites a Ferment, which in a little Time, throws off such an Expumation, as we call a Running, do agree that Numbers (though sound) carry Infection; we only differ in the Manner they accomplish it, which I rather suppose to be thus: When the Venereal Appetite is

Clap
Symptoms.

Gonorr-
hæa two
Sorts.

The Wo-
man is
first infec-
ted, and
how.

jaded

jaded with the too intemperate Efforts of several Men, it will be next to impossible for those Parts to suffer the continued Frictions made there, (as common Women do, without excoriating and fretting the Membranes of the *Vagina*; and such Excoriations, how small soever in the Beginning, meeting with an ill Habit of Body, together with the natural Incalcescence and Moisture of the Parts, will soon degenerate to an Ulcer; which Ulcer will be the Distemper. And perhaps herein lies the Difference between the *Fluor Albus* and *Gonorrhœa*, (when thus contracted,) that the one is a Weakness from too frequent Irritations made there, and the other, besides that extrin-sical Accident, has an ill Habit of Body joined that induces Intemperies.

What I think gives Credit to this Opinion, is the Customs of the *Jewish*, *Mahometan*, and many Eastern and Southern Countries, who allow a Plurality of Wives, and an unlimited Number of Concubines, restraining the female Sex, at the same Time, to one: For this, tho' an inferiour Motive of the Law, argues the World to have previously experienced such a Liberty in them more destructive of Health and a sound Constitution than in Men. Among other Creatures, there is an Instinct answering such a Purpose of the Law, whereby the Females are *provoked only at certain Seasons to Propagation*, and *abstain after Conception*; Nature intimating by it a *Lesson of Chastity to the Fair*; that it should be their peculiar, as well as most ornamental Virtue.

Against it I can form to myself only two Objections: *First*, That it may be alledged the Activity of some Men this Way, might prejudice a weak Woman the same as a Number: And, *Secondly*, it may be asked how an Ulcer in *Vagina*, can acquire Malignity enough to communicate Infection on Coition, when the greatest Degree of Virulency in another Ulcer produces no such Effect?

But to these it may be answered, that the Strength and Activity of any two in Health, (constant to each other) will seldom or never be found so disproportionate as to become hurtful, (it is Change that makes the Pungency of Lust injurious;) when it is, the Disorder ensuing can be no more than a *Fluor Albus*, or a Weakness without Malignity. And as to the other; Why an Ulcer here should sooner impart its Mischief than any other, is,

That

That the Parts concerned are in all Respects more commodious for giving and receiving any Injury; and that the Heat raised and excited by Lust, gives a Force and Activity to the Salts generated under the Corruption; whereas any other Ulcer, though never so virulent, cannot emit Effluvia's in such Force or Numbers, nor to Parts so susceptible of their Reception: But if they had those Advantages, it is likely their Effects would be equal, many ill Consequences following from an Ulcer with Virulency in any Part incautiously dried up.

That Lust also is a very necessary Adjunct for communicating Infection, and giving Force to those virulent Miasms that are, as it were, darted by it from her, we judge by that particular Power and Influence Imagination is found to have in the Commotion of these Parts. In this Case it is so much, that many infected Women avoid hurting their Husbands principally on the Moderation and Coolness of their Enjoyments; whereas a Stranger inciting more intense and vigorous Desires, as seldom escapes. The same may be said, where two or three, with weaker or stronger Inclinations, lie with one and the same infected Woman, that one, perhaps, shall be catch'd, and the others come off unhurt, chiefly as the Fancy on either Side is brisk and lively, inclin'd or disinclin'd.

Venereal Contact seems of such Necessity for communicating Infection, that with me it is a very unlikely Thing for Venereal Matter ever to do it without. *Those Adepts who have asserted the contrary of this, have done it in improbable Instances, saying, It is not always necessary a Woman be clapp'd to give it a Man, but that he may take off all the virulent Matter left in the Passage by a preceding Gallant, and she remain perfectly well; or that she may give it him by only taking the corrupted Matter from her Body in her Hand, and wetting his Privities. And others relate its highest Degeneracy, or a Pox to be contagious, by wearing the Cloaths, Lying, or Cohabitation, especially if the Infected be overspread with cutaneous Eruptions and Blotches.*

There are but two Ways in this latter Case, whereby Contagion can be supposed to pass, and that is, by their throwing off a greater Quantity of noxious and virulent Effluvia, in the manner some suppose the Plague and Epidemical Distempers to infect; or else like what is related in the *Philosophical Transactions* concerning Conta-

gion in the Itch, *Animalculæ* are bred in those Globules dispersed about the Skin, which making their Way through, shift from Place to Place, and so carry Infection, they living (says the Relation) two or three Days when from the Body. But how well these *Assignata* may resolve other contagious Distempers, they appear here but light in the Balance; FACT BAFFLES PHILOSOPHY. And if all those who have suffered this Way, are like what have fallen to my Share, there is not one could stand by any other Pretence than Coition. Whence we ought to account this Distemper a Mark of Divine Displeasure: We sin (as *St. Paul* says) against our own Body, and receive a present Correction, that the Sense of our own Interest might work on us, and bring us back to Temperance and Virtue.

I. *How a Man becomes infected.*

Christal-
lines,
what they
are.

Women, we have adjudged sometimes to become infected by the Admission of Numbers, though sound and healthful: But a Man cannot by the same Means; because among other Reasons, there is this invincible one, That Nature is not able to support the Repetition of those Acts to such a Multiplicity, or in such Measure, as with her who is passive: But, could that be, I believe also he might so contract it. Insatiable impotent Efforts, or too painful Enjoyments, through the Straitness, of the *Vagina*, at Immaturity, frequently discover something like this, in what we call *Simple Gonorrhæa's* and *Christalline's*: The latter are puffed up, clear Swellings of the Prepuce like a Blister, and submit (when thus contracted) to Rest, warm Fomentation, and Cataplasm; though, perhaps, Time, Neglect, and ill Habit, might change, and make them become virulent, did not Pain, or the Debility of Nature prevent a further Use of the Cause that first produced them, and hinder our Actions from keeping Pace with the Viciousness of our Wills and Inclinations. For this Reason, therefore, Venereal Symptoms, so contracted, never settle or terminate in a Pox: And I am apt to think, all Malignity that does so to him, or is contagious, *must always be from an infected Person, and always by Coition.* For a clearer Understanding of which, and

and the Manner of Communication, I shall cite two or three celebrated Opinions about it, and then subscribe my own.

Dr. Keil says, its Conveyance is by the Elasticity of the Air, thrusting the morbisick Matter into the excretory Ducts of the Prostatae, which are empty on Coition; and that a Simple Gonorrhæa is nothing but a Corrosion of the spongy Borders of those Vessels terminating in the Urethra. Dr. Keil's Account of Infection in Men.

Others think, a Gonorrhæa to be the Effect of a Fermentation made between the infectious Liquor, and that of the Prostatae, and so without Corrosion, an Efflux thrown off like Yeast from Beer. A second Opinion.

Thirdly, Dr. Cockburn supposes a Gonorrhæa to be the Increase of that Liquor that is discharged by the excretory Glands of the Urethra, and done by the Venereal Stimulus, in the same Manner as Cantharides applied, would do; the Quantity of Matter discharged being in Proportion to the stimulating Force they are affected with: And this Stimulus (he says) increasing its Acrimony, does in Process of Time, make Ulcers in the Urethra. This he farther opposes to Dr. Keil's Opinion, by saying, the Urethra will admit very little; and that there is no Muscle, Membrane, or Machine, alledged to help it forward: Not considering that he wants some such Help (as he objects) to carry the Infection to the Urethra. A third Opinion.

Dr. Turner also (I think) places the Seat of a Gonorrhæa in these mucous Glands, whose Orifices have a Power of Opening, and contracting like Sphincter Muscles, but rendered flaccid by Venereal Taint or Medicines ill administered.

Mr. Cowper's Dissection are brought to confirm this. The Ostiolæ of those Glands in sound Subjects being found firm, and with an Elasticity, as it were; and, in unsound, flaccid and loose, when at the same Time, the Prostatae, Vesiculæ Seminales, and Parastatae, were perfectly found.

But these Opinions, besides their Opposition to one another, are deficient in carrying their Aim singly to a Gonorrhæa, without any Attempt at the Cause of a Chancre, Cordee, or Phymosis, which Men often become infected with, without a Gonorrhæa. I shall therefore begin my Inquiry here, being assured, that they at least want another and different Explication, which, perhaps, when found, will facilitate our Search about a Gonorrhæa; The Author's Opinion of Infection.

and if I am right in my Conjecture, they arise from the Strength, Activity and Solidity of the Salts hid with the Corruption; which being dispersed about the *Vagina*, are volatilized, and made fitter for Communication by the Heat of Lust, and received by the enlarged Pores of the *Penis*, where by their Pointedness they shortly effect an Erosion.

The Manner of this Imbibing or Suction on the Man's Side, is not absurdly accounted for by the general Relaxation that attends all sensual Pleasures, of which Coition is, perhaps, the greatest. Now, as it most exquisitely affects us, the Parts are relaxed, and made more easily susceptible of any Venom to be transmitted, and that again from her becomes enabled to insinuate, and escape through the Pores by the Pungency of their Salts, and Power they are darted with; and if the Degree of Relaxation in any Part be in Proportion to the Pleasure, (as in the agreeable Objects of any other Sense it is, where, though some Degree of it results to the whole Man, yet something remains peculiar to the Sense of which it is an Object, then the Instruments of Generation, by being most relaxed, will be also most fitted on that Account for the Reception of morbid Matter.

Hence the genital Parts should always suffer first, and amorous Men soonest.

In warm Climates, the Uncircumcised of Soundest Constitution, will often find the Liquor from the *Glandulæ Odoriferæ*, to fret and ulcerate without Care and Cleanliness in frequent Ablutions.

And if virulent Matter, thus externally lodged, can act like *Cantbarides*, and produce a *Chancre*, *Chordee*, or *Phymosis*, then I believe we may also, without any Repugnancy to Reason, think this outward Application of it in Coition, sufficient to produce a *Gonorrhæa*; the Difficulty against it being only how this Taint can be transmitted hence to the *Prostata*: Which will not be so hard to imagine, if we consider what has been already said of the Power impelling, and the Aptitude to receive. We find all Parts of the Body porous, and, by many Experiments, receptive of any proper Matter incumbent on them, conveying and mixing a Portion with the Humours of the Body, as in Bathing, or Uction.

In all Translations of Tumors, whether by Revulsion or Derivation, this Sympathy and Communication of Parts is evident, and particularly in the present Case, where, on an improper handling, the Virulency will revert into the Blood, and produce all the Symptoms of a *Pox*; and, indeed, all outward local Applications (*Epithemia, Epicarpia, Suppedalia*, or Emplaisters) to any Malady deeper than the Skin without this, would be impertinent; they not only, therefore, by touching the *Fibrillæ* excite a new Motion in the Part, but evidently mix with the Blood: Why then should it be thought so extraordinary for infectious Matter, armed with other Properties than bare Fluidity, to affect these Glands at so small a Distance, since it must be acknowledged, the several Parts of a Member have a much easier Communication with themselves, than with the Whole? as we often see in the quick and ready Translation of a *Gonorrhæa* to the Groin and Testicles, and *vice versa*, the gradual Retraction of the Glands after Emission, and the Lubricity of the Passage also help?

The only remaining Objection to this Transmission by the Pores, is, That the greatest Corrosions at the Glands and *Præputium*, are rarely attended with a *Gonorrhæa*; whereas, were such Corrosions thus affected, as it would be an Argument of a stronger Infection, and the Corrosiveness of that Venereal Matter to be greater, it should as seldom miss. This seems to be from the Contraction, Pains, and Swelling, that attend those Ulcers, whereby the Passages to the *Prostatæ* are straitened and obstructed; but a slighter Degree, creating no such Impediments, easily passes, and is sufficient to propel that Humour from the Glands, which in a less Proportion, is their Nature and Office. *From hence we may learn, a Gonorrhæa to be the mildest Species of Infection.*

If any should yet object, and think the *Mucous Glands* of the *Urethra* more easily reached than the *Prostatæ*, and so be the *Seat* of a *Gonorrhæa*, I shall no further insist; either or both may in their Turns be touched, *i. e.* the constituting Vessels of those Glands, will, by the Taint communicated, be rendred weak and flaccid, parting on such a *Stimulus*, not only easily with their Contents, but changing them (as happens in many other mixed Liquors) to dark, muddy, and thick Consistencies; and when the

Power has been very great, destroying the *Ostiolæ* of those Glands terminating in the *Urethra*; when it has played there too long, or Mercurials have weakened the Vessels, then sometimes will follow incurable Gleets.

From the Whole of this Explication, we may see a Reason for that Custom in many foreign Countries of washing the Privities well after *Coition*, (to wit,) that they find it preventive of *Infection*; and, perhaps, *Circumcision* was not instituted by that renowned Law-Giver *Moses*, or the Impostor *Mahomet*, nor practised by ancient Nations, without a View to the Cleanliness of this Part, and Prevention of foul and loathsome Distempers.

Those who account for a *Gonorrhæa* thus, do not say, a *Disuria* is from an *Excoriation in the Urethra*, but that the Sharpness of the Infection thinning and carrying off the *Mucus* from the Membrane that lines it, is made more sensible of the pungent Salts of *Urine* passing through: Which they would confirm by the Nature of Patients Complaints; who don't speak of the *Heat of Water*, as a Pain confined to one particular Spot of the Passage, but diffused, and seems an equal Vellication of the whole Membrane.

II. The Cure of this Distemper.

Definition
of a *Gonorrhæa*.

A virulent *Gonorrhæa*, or *Clap*, is the Emission of infectious Matter from the corroded *Glandulæ Prostatæ*, or those of the *Urethra*, accompanied with a *Disuria*, or, in other Words, the involuntary Flowing of Matter through the *Urethra*, with Pain, Inflammation, and Heat of Urine. These are its *Pathognomick Signs*; and the Degree they are in, with respect to Consistence and Colour in the Running, (as *Yellow*, *Green*, or the like) or Pain in *Water*, are what we may take the Measure of Virulency from, and will be found more or less, in different Subjects, according to the Malignity of the infected Person, and Constitution of the Receiver.

A *Disuria* is a necessary Consequence of the Running, it being a Pain from the acrimonious Salts of Urine washing through the Parts which that has excoriated.

The Cure,
under two
Intentions.

The Cure I shall lay down under these two Intentions:

First,

First, To conquer and carry off the Malignancy.
And,
Secondly, To heal and strengthen the debilitated Parts.

Mercury only is able to answer our first Intention, and effectually to subdue the Poison of this Distemper: The Reason why it has a Power beyond other Medicines for this Purpose, is its *Gravity*, and because its constituent Parts are extreme small, smooth, and spherical: The latter Qualification fits them for an Admittance into the smallest Passages, (even those almost indiscernable ones of the Glands,) and its Weight breaks all Coagulations, and fits the morbidick Matter for natural Secretions. And whatever Sights some may put on this common Road of proceeding, yet till better convinced in the Virtues of the several applauded *Specificks* that have appeared abroad in the World, I take Leave to defend it, as a *safe Practice*. For although a tedious, or an ill Cure, now and then happen, it is not justly so much a Charge on the Medicine, as the Method; when we leave off too soon, or continue it with Purges too long, a Practice equally mischievous. But more of this by-and-by.

I am surprized that every Body by their Practice should allow *Mercury* to be the only Foundation and Retreat for Cure in the last and stubbornest Stage of this Distemper, (a *Pox*,) and yet deny its Virtues in a milder Season. It must be confessed, there are too often seen many ill Effects from this Mineral; and on a serious Reflection, I cannot but think most of those deplorable Objects, found in Hospitals, or elsewhere, whose ruined Constitutions are attributed to the *Lues*, to be with more Truth and Justice ascribed to *Mercury*. But then this is not the *Use*, but the *Abuse* of it: An unskilful Management often precipitating Patients (and that in a short Time) into such miserable Circumstances, as the Distemper, left to itself, could not in Years (if ever) have produced. From this Prepossession many take a Handle to recommend their infallible *Nostrums*, which, when good for any Thing, still have this for their Basis.

The Ingenuity of making *Mercury* *specificcal*, will lie in the Measure and Manner of Administration; that it suits such Degrees of Infection, and such Constitutions: A Point wherein one Man will excel another, according to their
different

different Capacities, and Opportunities of Experiment: All other Ways are supported by nothing but a *Brass Front*. The many successful Attempts of those who publicly invite Men to *Safe and Speedy Cures*, have pretty well exposed that Sort of Credit; and People see it to be nothing but a Competition in Cunning; who shall betray with most Success, without the least Candor or Regard to the Promises they make: Nor is it a small Disparagement to *Arcana's* here, that they are generally lodged with the Illiterate: who grow bolder in their Assurances of Infallibility, in Proportion to the Contempt their Physical Skill is held in.

If one in twenty comes off unhurt (we will not say, cur'd) by a *Specifick*, or a *Nostrum*, a Certificate is easy.

*The Pictures which escape, they wisely keep:
But where are those that perish in the Deep?*

GARTH'S DISPENSARY.

I begin the Cure with a strict Regulation in Living, particularly an Abstinence from spirituous Liquor and salt Food, and prescribe directly a *Mercurial Bolus*.

℞ *Mer. Dul. gr. xij. Cms. Ros. q. s. f. Bolus hora somni sumend.* purging it off next Morning with an Infusion of *Senna*. After the first or second Time, I increase the *Mercury* in the *Bolus*, and give stronger *Catharticks*.

℞ *Pil. ex duobus* ℞j. *Rez. Jalap. Bals. Peruv. ana gr. ij. Calomel. gr. vj. fiat Pil. N^o v. mane vorandus.*

Vel ℞ *Pil. Cochiae* ℥ss. *Calomel. gr. x. Ol. Junip. gr. iij. f. Pil. de aurand.*

Vel, ℞ *Elect. Lenitiv.* ℥ij. *Mer. Dul, gr. x. Rez. Scammon. Jalap. an. gr. iv. Ol. Carui gr. ij. M.* Constantly administering, at the End of their Operation, a *Paregorick Draught*.

Purges are given after *Mercurials*, (I believe,) not so much from a Supposition that their Virtues immediately reach the Part affected, and subdue the Poison directly, as from a distant View of altering the Habit of Body, and carrying off those vicious Humours that would else probably take their Course that Way, and heighten the Fury.

This

This Opinion is founded in Practice; where nothing is commoner than from two Men infected by the same Woman, to see the one cur'd in a few Days, when the other, perhaps, requires Months; which can be from nothing sooner than their different Habits.

Purges are designed likewise to prevent any ill Effect from too great a Quantity of *Mercury* remaining at once in the Body.

I have seen when *Purges* have been too strong, or too frequent, in the beginning *Gonorrhæas*; the Matter revert on the Testicles, or Groin; with such severe Pains, as has taken away the Speech, and given an utter loathing both to Food and Physick, an Instruction to endeavour by reversing the Practice, to bring it in full stream again through the *Penis*; or else effectually carry on the Revulsion, by an immediate Salivation.

Too long a Course of Mercurials will sometimes bring on Running of uncommon Colour and Quantity, *Alopecia*, Inflammation, cold Sweats, Fever, &c. prudently placed to the Irregularities of the Patients, but is really in the Management of the Medicines, bringing after long Courses of them incurable seminal *Gleets*.

Mercurials, we are sure, when their Operation is by the Salival Glands, and for some Constancy, will remove the most confirmed *Pox*, (or no other Medicine known in the World will;) and this, by returning the contaminated Fluids to a sweet and balsamick Liquor. In lesser Degrees of Infection they will effect the same by the intestinal Glands: *Purges* are therefore only to direct their Operation that Way; and the more or less of this, is the Point of Judgment in Cure: which is to respect the Difference of Constitution and Degrees of Infection.

This may suffice for their Defence in general. There remains another material Consideration in the Use of them, and that respects the Frequency of their Repetition. And rightly to understand a Proportion in this, we are to consider that as the Malignancy of a *Gonorrhæa*, Nature herself, in good Constitutions, with proper Dieting only, would run off in a due Quantity of Time; and that our Administrations are but her Assistants thereto: The Faults may be equal in leaving them off too soon, or continuing them too long: By the former the Infection is not conquer'd; and by the latter, the Constitution is enervated,
and

VENEREAL DISEASE.

and Nature's Efforts weakened, instead of being assisted. In Consequence of this, I repeat the *Mercurial Bolus*, and purge no oftner than Reason tells me their Strength will admit, without a *Hypercatharsis*, Fainting, or Loathings; (which is with some every other Day; with others twice a Week, or less;) and in the Intermissions, give largely of the following *Apozems*, or *Emulsions*.

℞ *Sem. quatuor frig.* ʒj. *Aq. Mentb. f.* ℥ij. *Sal Tartar* ʒj. *fiat Emulsio Sacchar. candid. ad gratiam edulcorand.*

℞ *Amygdal. dul.* N^o xij. *Sem. Papav.* ʒij. *contundantur & sensim affunde Aq. Plantag. vel decoct. Hord.* ℥ij. *Syr. Albæ* ʒj. *F. Emulsio.*

℞ *Decoct. Pectoral.* ℥ij. *Spir. Nitri dulc. g.* xxx. *F. Apozema.*

℞ *Sal. Prunel. Sacchar. candid. p. æ M. f. Pulvis sumat ad Quantitatem Scrupuli in Cerevisia tepid. ter in die.*

As these, or other Forms of *Diureticks*, are supposed to ease the Heat of Water by increasing the Quantity, and so diluting the Salts; so to this End, such an Injection may be serviceable also, as is soft, and can leave something of a mucilaginous Substance to lubricate and defend the *Urethra*.

Solvatur G. Tragacanth. vel Arab. vel Icthyocol. in sero. Lactis, colatur. tepide injic.

℞ *Vit. Alb. q. f. solv. in Aq. Font. & Vin. Gallic. a part æquales.*

Or *Sal. Vit. ʒj. in Aq. Rosar j.*

Signs to
judge of
the Malignancy,
and a Continuance of
Mercurials.

While we are continuing the Use of these, it will be proper to weigh with ourselves, what are the Signs of our first Intention being answered, and sufficiently authorize us to leave them off: For there is no doubt a Period, which the Skilful discern, wherein a Change for healing Balsamick Medicines is necessary, and required; and which, as we come short of, or exceed, may be either way pernicious: For, *First*, if (while the Signs of Malignancy abide) too sudden a Check be given to the Running, either by the unseasonable Use of Astringents, or too quick and strong Purging in the Beginning, which turns to the same, then

then it will either revert and taint the whole Mass of Blood, or produce, by a nearer Translation, acute Pain, Tumor, and Inflammation of the Groin or Testicles; which may prove of as unhappy Consequence; particularly, in the last, the Pains are agonizing, and attended with *Fever*, *Syncope*, and *Nausea*, and the Membrane wanting Fat, never without Danger of Corruption and Gangrene.

Again, if, on the other Side, the proper Season is mis'd of doing it, and there is too cautious and long an Adherence to *Mercurials*, or irritating Medicines, whether Catharticks, or Diureticks, the Running goes on without End, and, at last, brings an irrecoverable Laxity on the Parts, converting a *Venereal* to a troublesome *Seminal Gleet*. *The Consequence of too long a Course of Mercurials.*

To avoid these Extrems, I take the proper Indications for such an Alteration to be Absence of Pain, and Soreness about the Groin and Testicles, when the Distention of the Yard is gone off, when the Heat of Urine is considerably abated, and when the Running is of thick and equal Consistence, changed in Colour, and lessen'd in Quantity; for as the contrary of these are what constitutes its Virulency, so their Remission must be Signs of Amendment, and a proper *Stadium* for changing the Method. It is not to be expected a Running should ever so entirely change, as not to leave a Stain, which some do sillily imagine: No, it will be sufficient, that there are considerable Alterations in the Respects abovemention'd: The better those appear, indeed, the safer shall we be in stopping it; and let the remaining Matter revert where it will, (separate from Signs of Malignancy,) it can be of no more Hurt, than the drying of an Issue, or other simple or common Ulcer. *Where to stop.*

The second Intention, is, to dry up the Running, and heal and strengthen the debilitated Parts. The former Part of this Intention I have compass'd sometimes (in *Athletick* Constitutions) by a single quick Purge; which shews, that a *Cathartick*, without any other Property than its stimulating Power increased, will turn astringent, and dry up the Liquor of the Glands. But as Circumstances will prevent this from being the constant Effect of it, and that (like * *Mrs. Avery's Case*) it will be far from happening.

* A Quack Advertisement.

pening every Day, I shall select some of those Preparations I've must successfully experienced, and range them in their Order of Healing and Astringency, to sort with the better or worse Appearance of the Indications above; and doubt not but a due Observance to the Season of their Administration, together with a thick glutinous Diet, (which under this Intention should always be directed,) will make them answer as effectually with others.

- ℞ *Sal Prunell.* ʒiij. *Pulv. Rhabarb.* ʒij. *Troch. de Agaric. Alhandal. an.* ʒij. *Antim. Diaphoret. CC.* ppt. *Mer. dul. bene levigat. Rez. Jalap. an* ʒj. *Elect. Lenitiv.* ʒij. *Bals. Capiivi q. s. sumat ad magnitud. Castaneæ omni mane & Vespere.*
- ℞ *Pul. Rhabarb.* ʒij. *Sal Prunel.* ʒj. *Nucis Moschat.* ʒj. *Bals. Capiiv. Peruv. ana* ʒjss. *sumat omni mane ad duas vel tres Dejectiones promovendas.*
- ℞ *Ichthyocoll. Albiss.* ʒj *decoq. in Aq. Font.* ʒxij *colaturæ adde Aq. Rosar.* ʒj *M. sumat. Coch. ij. (in lacte vaccino dissolut.) quatuor in die.*
- ℞ *Cortic. Peruv.* ʒj. *decoq. in Aq. Font. q. s. ad* ʒviii. *colatur. hujus* ʒij. *P P.* ʒj. *Aq. Cinam.* ʒj. *M. F. Haust. octava quaque hora sumend.*
- ℞ *Terebinth. Venet.* ʒss. *Vitell. ovi. syr. Bals.* ʒj. *M. in Cyatho Vin. alb. sumend.*
- ℞ *Bol. Arm.* ʒj. *Bals. Capiiv.* ʒiij. *capiat unciam semis quotidie. semel vel bis, alvos promovet.*
- ℞ *Bol. Arm. sang. Dracon. Terr. sigillat. Pul. Rhabarb. tort. an. p. æ. Tereb. Venet. q. s. f. Pil. mediocres sumat quunque bis in die.*
- ℞ *Pil. Cretaceæ B. eodem modo sumend.*
- ℞ *Decoct. Guaiac. sæpe sumat Haust. in qua instillat. g. xx. Tinct. Guaiac. vel Tinct. ex Bals. Peruv. Gilead, &c.*
- ℞ *Sacch. Saturn. Vitriol. R. an.* ʒss. *dissolut. in Aq. Ferraria Ibis. & filtratur pro injectione.*
- ℞ *Aq. Plantag.* ʒvj. *Tinct. Myrr.* ʒj. *vel Tinct. Veneris* ʒss. *tepidè injicitur.*

To these we may add the Use of the Cold Bath: It gives a Contraction and Tensity to the Fibres in general, and therefore must close the Orifices of these Ducts in particular.

III. *Symptoms of Virulency.*

The other Symptoms of *Virulency*, which denominate a Person clapp'd, and that as well without, as with a *Gonorrhæa*, are the *Chordee*, *Phymosis*, a *Periphymosis* *Chancre*, and *Bubo*. These I chuse to speak of separately in their Cures, because they require (besides an internal Use of *Mercurials*) local Applications.

A *Chordee* is a painful Contraction of the *Frænum* in Erection, caused from an Inflammation of that Membrane; which, on that Account being thicker, is consequently shorter, and must excite a Pain, when the Erection of the *Penis* stretches it.

Dr. Cockburn distinguishes another Chording Pain, arising from a Sore or Ulcer in the *Urethra*, as often as it comes to be compress'd by an Erection of the *Penis*; and infers from it, how far within the *Urethra* the Seat of a *Gonorrhæa* is. But against this I object,

First, That if an inflated *Penis* can so painfully compress this Ulcer on all Sides, why should not a greater Compression with the Hand do it without Erection.

Secondly, If a *Gonorrhæa* be an Ulcer in the *Urethra*, and the Chording Pain a Compression on that Ulcer, then they must be inseparable Companions; and no *Gonorrhæa* could be without it.

And, *Thirdly*, I have known the *Chordee* often continue after a Running has been stopped; which by this Allegation, could not be true: supposing (as we reasonably may) that where there is no Running, there is no Ulcer: The proper local Remedies to it, are *Fotus's* of Milk wherein Lilly, Elder, or Marsh-mallow Root has been boiled, and a little *Sacchar. Saturn.* added, or in their stead, the *Cataplasma Resolvens*.

A *Phymosis*, is when the *Præputium* is difficult to bring backward. A *Periphymosis*, when it choaks at the Neck of the *Penis*, and will not without Pain or Trouble be brought forward over the *Glans*. In some these are natural Difficulties; but here, the Effect of Tumor and Inflammation, as those are again of *Chancres*.

Chancres are Venereal Ulcers on the *Glans*, *Præputium*, or *Frænum*. They are, with the *Phymosis* (as was observed in the Beginning) occasioned when the Venereal Taint

Taint is lodged here, and does by its sharp Qualities, both coagulate those Liquors that lubricate the Glands, and corrode the Fibres constituting them. The latter are *Chancres*, the former *Phymosis*; for a *Phymosis* is nothing but the effecting a Tumor on the *Glans* and *Præputium* at the same Time.

To a *Phymosis* the Injections should be mild.

℞ *Aq. Plantag.* ʒij. *Troch. alb. Rhas.* ʒj. *Mer. Potab. gutt.* vi. to be thrown between the *Glans* and the Foreskin with a Syringe, and retained there a little to wash and cleanse it: This often in a Day, especially if attended with *Chancres* to hinder their Agglutinating: A Fomentation should be likewise used, and a Cataplasm of the Seeds with a little *Ol. Lilior.* in it; or this following:

℞ *Mica Panis M.* j. *Farin. Hord. pul. flor. Cham. ana M.* s. *coquantur in lacte ad consistent.* Cataplasm. finita *Decoct. adde Ol. Sambuc.* ʒj.

If the Largeness and Stricture of this Tumor threaten Suffocation and Gangrene, open it by one Incision, sufficiently to clear the *Glans*; the deeper the more incommodious will be the Cicatrix. If Necessity calls for it, or an Adhesion should require more than one such Cut, it is better to take off the whole Prepuce.

To a *Chancre* this Lotion. ℞ *Aq. Plant. Rosar. an.* ʒj. *Troch. alb. Rhas.* ʒj. *in hac instillat. g. xv. sequent. liquor.*

℞ *Mer. sublimat.* ʒij. *dissolut, in sp. Vin.* ʒss. & *filtratur.* Or,

℞ *Aq. Galeis* ʒj. *Mer. sublimat.* ʒj, *solut. & filtratur pro usu.*

℞ *Un Basilic.* ʒj. *Præcipit, rub.* ʒj. *m. pro Unguento.*

Dr. Cockburn's Arcanum: ℞ *Hydrargyr. Tereb. Venet. an. P. Æ. F. Unguent.*

A Malign or Venereal *Bubo* is dangerous to repel, and should, from the Beginning, be assisted to Suppuration by Emplasticks, Cataplasms, Cupping and the like:

like: An Intention that will be found difficult to succeed in, and when compassed, without great Care, will turn fistulous.

I have run over this Section with little more than placing some proper Prescriptions under the several Heads, avoiding any nicer Disquisition in the Choice of them, or Season of their Use; not because they are entirely void of Efficacy, but because I am satisfied neither they, or any other *Arcana*, will alone answer the Purpose. Revulsion the most proper Method of relieving the particular Part, (by Venesection emetick or purging) will, in these Cases, ever leave a worse Injury, taint the whole Mass of Blood: They are all short, therefore, of the Eulogiums bestowed on them; and if not impertinent to the Ends proposed, are yet vexatious and tedious; and since they are so, and have a greater Tendency to a *Pox* than a *Gonorrhœa*, it's expedient, and I think a very good Practise, presently to resort to *Turbith*, for a Revulsion, or else, by some other equivalent *Mercurials*, to procure a Spitting: There is nothing these Symptoms better or sooner submit to; for as the Mouth grows sore, there follows a Mitigation, the Matter is diverted, the *Chancres* heal, and the Parts suddenly regain their pristine Form and Tension.

Eight or ten Days Continuance in a moderate Salivation, will ordinarily suffice to vanquish them; but if the Distemper proves more deeply rooted, requiring one of stricter Confinement and Regimen, take the following Rules.

Of SALIVATION.

The Symptoms of the *Pox* are cuticular Eruptions, *Pocky* Blotches, Ulcers in the Throat and Palate, nocturnal *Symptoms*. Pains of the Head, Shoulders, and Shins, Night-Sweats, *Alopecia's*, falling off of the Nails, *Gummas*, Nodes, *Talpa's*, Consumption, and *Murasmus*. *Amor intimus hæret medullis*.

The Bones will waste sometimes, as well as the Flesh in this Distemper, a Collapsion of their Fibres one third the Diameter; and this from the defect and corroding Quality of their Nourishment. Or they will become Carious, especially the Skull and Shinbones, these in the manner of a Honey-comb almost; with little rough *Spiculae*

culæ, that touching the *Periosteum*, *Pericranium*, or *Dura Mater*, produce exquisite Pain and Anguish.

The *Spina Ventosa*, also is now and then the Fruits of a pocky Consumption: Here the Bones do not pine but swell, in Irregularities like as Leprosy in the Skin and Flesh, and is called so from its pricking like a Thorn, which at length by its Sharpness erodes through the Skin into little Ulcers.

How a Clap comes to end thus intractably may be partly attributed to the Malignancy of the original Infection, partly to the Predisposition, or ill Habit, whereby the Blood becomes more easily receptive of that Venom; but most often to an irregular Management of Cure, and use of *Specificks*: It exceeds my Design, as well as Capacity, to unriddle further the Nature of this Venom, in its several Appearances under that general Denomination of a *Pox*; having only intended here the short *History of a Salivation*. by which the most of them are effectually to be removed.

Fluxes under what Cautions undertaken.

A *Salivation* is dangerously undertaken with aged People, with such as are lean, or dejected through Trouble or Misfortunes, or much emaciated; but especially with those whose Lungs are any Way distempered, that are Hectical, Phthifical, and Consumptive, to such a Salivation is certain Death; because, as this Habit is acquired by the glandulous Secretions being increased, *Mercury* pejorates the Mischief; and more so, if such Indisposition has proceeded from a former ill Use of it: It bursts those fine Vessels that before had lost of their Strength and Elasticity by the Distemper, and forces Blood by the Mouth, or partial excessive Sweats, in the Body, or both. Dr. *Moulin*, assures us from Experiments, that *Mercury* is very prejudicial to the Lungs, because they want that strong, brisk Motion the Muscles have in other Parts, and by their lax and spongy Texture are extremely unfit for clearing themselves of so troublesome a Guest. This, (says he) we daily see from Persons often fluxed; who are afterwards observed to die of Consumptions, that will not give way to any Course of Medicine: He injected ʒiſ. *Crude* into the Jugular of a Dog, that died some Days after of a violent *Orthopnæa*; the Outside of the Lungs being blistered, and containing mercurial Globules. To which likewise agree many interspersed

scattered Places in *Martin's Collection of Bawdy Letters*,
(called a *Venerreal Treatise*.)

Mercury, i. e. the Preparations in use; ordinarily operates by a Flux through the Salival Glands, and by the Parvity of its compounding Parts has a peculiar Aptitude thereto: The Benefits from it seems as much from the uninterrupted Continuance of its Operation, as any specifick Virtue in the *Mercury*; for the Blood has Leisure, by such a Length of Time as a *Salivation* takes up to separate its noxious and incongruous Parts, which are daily washed and spewed out by the thin Liquors continually taken, and consequently the Remainder, after such a Defecation, becomes more Homogeneous.

A *Salivation* is raised by *Mercurials*, and that either externally, or internally used. Two or three Purges always precede as preparative; and after that, if we intend it by *Unction*, make up the following Ointment, and draw on a Pair of Gloves and Stockings after the Use of it, to keep the Linnen and Bedcloaths clean. In what Manner raised.

℞ *Argent. Vivum.* ℥iv. *Axung. Porcin.* ℥xij. *M.*

An Ounce of this is to be used at a Time for three Days successively, beginning the first Illiniation on the Wrists and Ancles only, leaving the Patient to chafe it in with his Hands warm'd before the Fire; the second higher, about the Joints of the Knees and Elbows; and the third yet further up, but cautiously, because the nearer you anoint to the *Abdomen*, the more likely the Body will be of being laxative, and eludes its proper Operation: If these three In-unctions answer not the Purpose, we must still repeat it, and help forward with a Bolus of *Turbith*. *Turner* begins the first between the Elbows and Shoulders of each Arm. The next from the Gartering above Knee to the Ancles. By Unction.

This Way by *Unction* I prefer, especially in weak Bodies; the other more certainly causing *Nausea*, Vomiting, Looseness, Faintness, and the like Accidents, that interrupt a regular Course of Proceeding, and give great Uneasiness to a Patient: But since *Unction* has also its Faults, and is offensive by its Smell, and nastying the Clothes; since many also differ from me in this Preference, and give it to *Mercurials*, internally administered;

R

and

VENEREAL DISEASE.

and lastly, since the Rules to prevent those Symptoms mentioned, will require more Attention in the internal than external Use of *Mercury*, I shall chuse to finish the Course in that Method, and for easier Apprehension, divide the Flux into a Beginning, State, and a Declension.

And by internal Administrations.

In the Beginning, or first Attempts to raise a Flux, the only Thing to be feared and guarded against, is a *Diarrhæa*, which diverts the Operation of the *Mercury* from the salival Glands: This we must take notice is prevented, or abates and goes off, in Proportion as we can procure a Soreness in the Mouth and Jaws, and increase the Dribbling; and therefore a very great Stress lies in the Manner and Method, as well as in the Administrations themselves, and in a good ordering the Patient as to Diet and Confinement.

First, We have said two or three Purges are to precede: And the Reason of this is, that besides preparing the Body for succeeding *Mercurials*, they leave an Astringency that makes a Patient less apt to it after; wherefore those of them that leave more than others of that Property behind best suit the Purpose; as the

Potio communis purgativa Sydenham.

Secondly, In administering *Mercurials*, the Bolus should contain but a small Dose at first.

℞ *Mer. Dul. gr. x. Laud. L. gr. ij. Conf. Ros. q. s. fiat. Bolus quodque nocte sumend.*

And be increased two or three Grains every Repetition; because large Doses of it in the Beginning exert too much Force in the *Primæ Viæ*, and by the Effect of their own Irritation are pass'd off with the Contents; whereas a small one, without giving such Disturbance, leisurely intrudes itself, and in the Circulation arrives at and wound the Salival Glands; and when once it has obtained that Path the subsequent Doses more easily follow, and remove all Fears of a Diversion.

Thirdly, The Diet has its Use towards this End, and should be dry and astringent; Rice, toasted Cheese, Yolks of Eggs in mull'd White-Wine, a Harts-Horn Drink, and Roast-Meats in general, are proper Food; minding
to

to continue the most nourishing of them, (the Meats) as long as we can to support the Strength through; for in the Progress, the Throat will be too sore to bear swallowing any Thing but Liquids.

Fourthly, Another Means conducive to it, will be guarding against Cold; which would by constipating the Pores; make the Body loose. *Cutis densitas, alvi laxitas.*

These few Rules premised, we may go on with the *Mercurial Bolus's* for three or four Knights successively; and if the Spitting in that Time is found to have advanced but slowly, or the Body is laxative, alter it for one of *Turb. Min. a. gr. v. ad viij.* giving an Anodyne Draught at the End of its Operation.

Two or three *Turbith. Bolus's* following the other, and increasing their Dose, a Grain every Repetition, (*a. v. ad viij.*) may be expected to raise the Flux; but Constitutions differ, and will be always an Exception to any stated Number; I've known two *Bolus's* of *Calomel* raise a Salivation, and other times Twenty fail. An $\mathfrak{z}$ iss. of *Mercury* by Unction do, and at other Time $\mathfrak{ss}$ is. ineffectual. The latter was my common Way with Sailors, whom I have frequently salivated on the *Ollopo*. And here it may not be altogether unfit to mention the opposite Consequences, that at sometimes proceed from the Use of a Quantity under different Symptoms: I have known nocturnal Pains of the Head and Shoulders, that have been removed by using such a Quantity in Unction, tho' a Spitting never succeeded; and yet the same persisting when the Case has been Eruptions and stinking putrid Ulcers, has not only failed, as to the Salivation, but rendered the Case deplorable, by increasing their Number and Quantity of Matter, and consuming the Patient in colloquative Sweats. When Gripes pain at the Stomach, and cold Sweats come on instead of Salivation, its an Idiosyncrasy or Temperament that always forbids farther solliciting. But in this, Reason and Experience must be our Guide: We must be able to know when the Mercury operates kindly, and whether the Patient's Constitution and Courage will support him thro' the Course; because now, if the Success is doubted; we may safely divert with Catharticks, which in the Increase will be dangerous and impracticable: For my own Part, I have seldom missed, more or less, of a Looseness in

VENEREAL DISEASE.

the raising a Salivation, and have persisted in the Use of *Turbith*, when a Patient has had sixteen or eighteen Stools in a Night. But this has been in robust strong Bodies ; and with this Caution, of giving a Respite for a Day or two, a Hartshorn Drink, and an *Anodyne* Draught.

If in the Beginning of a Flux there should be a more than ordinary Pain in the Jaws and Mouth, and the *Saliva* running off bloody, we are not always to be startled at it; they are the common Attendants of Mercury, and reach no farther than the Parts immediately affected ; a Day's Intermiſſion from Mercurials will palliate, and in a great Measure correct ſuch Uneaſineſſes ; and to prevent their Return and Aggravation, we may perfect the Remainder of our Work by Unction ; which does not affect with ſo much Pain, as Mercury received by the Mouth, does.

The Spittle at firſt is thick and clammy ; but as it increaſes in Quantity, grows thin and ſerous.

The State of a Salivation.

By the State of a Salivation, I mean all that Time from a Patient's ſpitting about a Quart in twenty-four Hours, till its Height and Return, to that Quantity again, which may include a Fortnight, or more ; and during this, the exacteſt Regulation is required to promote the Flux, and avoid the Danger of a Diverſion. The Beginning has leſs Regard in Regimen, becauſe the *Fauces* as yet ſuffer ſolid and nourishing Diet to paſs and ſuſtain Nature ; but in this their Soreneſs will admit of nothing but ſoft Liquors, as thin Broths and Gruels ; which, as they afford very little Nourishment, and that the Flux is ſtill greater, a Faintneſs, and Debility follows of Neceſſity, that will conſtrain us to ſtricter Rules. The Patient muſt be altogether confined to the Bed ; he muſt be kept between the Blankets ; the Bed well lin'd ; the Room cloſe and warm ; and a Julap *pro languoribus* ; the Head and Jaws ſhould be covered alſo with a Flannel Muſſer, it repels the Effects of Cold, and is *anodyne*, not too cloſe drawn nor continued longer than need, leſt it leave an irrecoverable Contraction in the lower Jaw. Laſtly, the Mouth ſhould be frequently waſhed with the
Liquids

Liquids they drink, to cleanse and scour the Glands from Filth, that they may the more freely spue out their Contents. For this Purpose, therefore, and also for quenching the continual Thirst they will be under from a Spitting, Plenty of them must be in Readiness; and they should be used warm, because Cold (in this general Ulceration of the Mouth) would create great Pain, check the Flux, and hazard the falling out of the Teeth. If there should be a Necessity to check its Activity, *Flos Sulphuris* is the Medicine.

I account the Salivation well raised, if I can make it amount to two Quarts in a natural Day, and continue it so for eight or ten; but let the highest Quantity be what it will, whenever it lessens regularly, it signifies the Mercury to have spent its utmost Force and Power, and puts us on Considerations for our last Branch, *The Recovery, or State of Declension.*

The Recovery, or Declension.

A Flux that has advanced kindly to its Height, will as gradually decline; and in the Close of it, calls for Physick and Diet-drink to expel the Remains and Recrements of the Mercury: They are not given till the Swelling and Soreness of the Jaws and Mouth are well abated, and the Draining little: Some there will be while the Mouth continues sore; because, while the Fibres are excoriated, there will be a proportionable Vellication that will express the Juices within their Contact; and this might continue an inconvenient Length, if the Humours were not diverted, and the Ulcerations dried in the End by *Enema's, Catharticks, and Gargles.*

- ℞ *Pil. Coch. Extr. Rud. ana gr. xv. rez. Jalap. gr. iv. Ol. Carui gutt. ij. f. Pil. N^o v. deaurand. ad sex vices repetand. alternis diebus.*
- ℞ *Fol. Sennæ Alex. 3j. Zinzib. Sal Tartar. ana 3j. Infunde tepide per noctem. Colatur. 3iij. adde Ol. Anisi gutt. j. Syr. Rosar. Solutiv. 3. vj. M.*
- ℞ *Manna opt. 3j. dissolv. in ℥j. Aq. Strethamens. & superbib. ℥iij, Aquæ ejusdem singulis diebus.*
- ℞ *Aq. Rosar. Plantag. ana 3iij. Mell. Rosar. 3j. Ol. vit. gutt. vi. pro Gargarism. ad os eluendum.*

VENEREAL DISEASE.

℞ *Fol. Plantag. Myrtill. in Aq. Hord. decoct. Colatur.*
 ℥viij. adde *Syr. è Moris* ℥j. *M. F. Gargarism.*

Diet-Drinks are appointed in Conjunction with these, and may be continued six Weeks or two Months. They together subdue and carry off the Remnants of the Mercury, heal the Excoriations of the Mouth, and Drinks, in particular, correct the Acidities of the Blood, and procure a gentle *Diaphoresis*, which very much avails in finishing a Removal of all Pains.

℞ *Baccar. Junip. ℥j. Rad. Liquirit. Sem. Fœnic. ana*
 ℥j. *infunde in Cerevisia tenuis cong. j. colaturæ, adde*
Sp. Cochlear. ℥ij. pro usu.

℞ *Lign. Sassafrat. ℥iij. Sarsæ. Guaiac, ana ℥ij. Rad.*
Liquir. Sem. Coriand. Anisi, ana ℥j. CC. Raz. ℥if.
bulliant. in ℥xvi. Aq. ad xij. Colaturæ bibat sæpe in
die.

℞ *Thææ fact. ex lign. Sassafrat. bibat.*

℞ *Cerevisia è Lignis Doctoris Fuller.*

℞ *Decoet. Diæticum Sydenhami pro Potu communi.*

This Regimen succeeds thus to one another, supposing the Salivation goes on smoothly, but there are two or three Accidents met with sometimes on the Declension, that bespeaks Regard.

First, Cold or Neglects have retarded the Crisis, if we may so call it of a Salivation, the whole Mouth apostematizing as it were, with more Pains and Swelling than should be.

The Remedies are redoubling the Warmth, particularly about the *Fauces*. Cardiacks and proper Sustenance to assist the Suppuration, which with Gargles, I have seen cast off, at the End of a Flux, in large Sloughs and Putrefaction, cleansed with armed Probes like Ulcers more externally. Our bad Nursing on board of Ships does probably produce this greater Trouble. The Glands in this Case prolong their Expuition, and take up more Time for recovering a greater Relaxation.

Secondly, It has happened to me, from the same Carelessness and Neglect of the Mouth, in this State of Declension and Healing; that the muscular Parts has united to the lower Gums, just as two scalded Fingers may be united

united together, making all stiff, and the Mouth opening a very little way ; this, I say, is owing to neglect in cleaning the Mouth often. Cold, but chiefly the Tortures of the Flannel Bandages and Wrappers, for so long a Time, which has given me a great deal of Trouble in dividing them with a Knife, and keeping them separated afterwards with thin Pieces of Linen dipped in Gargle between ; and after all, became little better, remaining stiff and contracted.

The Caution here is to slacken such Bandages betimes, especially if the Patient is old ; and keep (in this Decline) the Gargles continually using, Frictions, and Oiley Embrocations.

Thirdly, The Swelling and Foulness of the Mouth, will continue when the Spitting in a Manner is done ; arising by what I could observe, from the Tenderness of one Patient beyond another, on whom cold Air more easily impresses its Effect on the excoriated Glands ; whereby Salivation stops, or declines hastily and irregularly, with painful Apostemations about the Mouth and Jaws.

They all Point out the Power and the Evil of Mercury, and shews to me, that the gentler and longer Salivation is preferable to the Quick, and will not probably be attended with such ill Symptoms.

I shall add to this two or three Observations more, not according to the Manner of great Professors who never miscarry, but

“ Ride in Whirlwinds and direct the Storm.

ADDISON'S Hero.

*Mine shall be like Buoys on the * Deadman, full as Edifying.*

HISTORY I. J. W—

Contracted a virulent Gonorrhæa of ill Colour, a painful Shanker, Phymosis and Priapism accompanying, which by his own Skill in Physick, for two or three Months, were mounted up to severe nocturnal Pains, affecting his Shins and Shoulders alternately. Painful

R 4

Tumours

* *A Shoal at Spithead.*

Tumours on the Knee-Joints, large dusky colour'd Spots all over him, and particularly on his Legs. In this Condition, and weary of his own Council, he told the Cock-pit Steps.

A Salivation was necessary, and therefore preparing him by Purging, I began in the Manner has been recited by Unction. And that not succeeding fast enough, assisted it by internal Use of *Turb. Mineral*, gr. vi. *ad ix.* three Evenings running, the better to secure against a Looseness, and followed it three Nights more with *Calomel* gr. xx. in a Bolus.

The Unction and these together, one would have thought could never fail raising a Spitting in the robustest Man; especially when there was no Looseness. But contrary to all Expectations, the Mouth was very little affected, and many of the large dusky Spots, particularly those of his Legs, scabbed one after another very fast, and broke out in stinking sordid Ulcers, extremely tender; and which I usually dressed with Præcipitate mixed in the Digestive, spread on the softest Lint, and Cerate over. I should immediately have been caution'd on the Appearance of Ulcers *in this Manner*, and judged the Mercury to have spent its Force this way. And that persisting in the Method would still only increase the Ulcer, and never raise a Salivation; but the nocturnal Pains being at the same time much abated, and having a *Brother's* Advice, I went on with the Mercurials: The Consequence of which was no Spitting, but a multiplying the Ulcers and Toughness of the Sordes in them, a general Emaciation and Weakness followed, a Loss of Appetite and faint Sweats. I attempted now to divert by purging Clysters, but too late the Mercury had struck out another Channel, that in a weak Condition, could not be turned. He languished about six Weeks after this and died.

OBS. The Ulcers and faint Atrophial Sweats, the Consequence of them, was doubtless owing to the Mercury, nor do I think the Distemper under the greatest Intemperance, could have done that in Years which this did in Weeks.

2dly, I would advise from this, That when Mercurials are discovered, to take their Course by the Pores, or by Ulcers; for I do not see the Necessity of always passing by the salival Glands, that they forbear going on for that time, making immediate Revulsion by Catharticks; unless we knew how to manage these to a like Benefit with Salivation.

HISTORY II. H. S.—

This Man applied to me full of dark Eruptions over his Body, Nocturnal Pains and Sweats, the Progress of two Years Physick and Quackery, for dispersing a Bubo. The Pains affected his Head, Shins, and Shoulders; increasing, he found more and more upon him, with a little Cough, and now and then bloody Spittle.

I judged these Symptoms, much strengthened by a long and irregular Use of Mercurials, and represented, that as nothing seemed effectual to remove them, but Salivation, so I doubted of the Success of it. Missing his Mouth they would the more confirm his Misery. On this he was ten times more Importunate: *Death, says he, is better than a bitter Life, or continual Sickness.*

We were on board what we call an empty Ship, in cold Weather, up *Chatham* River, additional Inconveniences. However, having agreed to his Request, after a couple of Purges, began Uction; using in three Evenings ʒij. *Mer. viv.* about his Arms and Legs, and that very little affecting his Mouth, followed it every Night for a Week with a ʒj. of *Calomel* in a Bolus. His Chaps, Neck, Face, and Head, being wrapped up very warm, as a Means to invite that way.

At length I brought the Salivation to about a Quart in 24 Hours, continuing so three or four Days, and was my *Ultimatum*. If I could be secure with this, I was resolved to go no farther; but there was one suspicious Circumstance. The most of what he Spit was in the Day, his Sleeps in the Night generally carrying it through the Pores in great Sweats, that left him every Day more than other dispirited and weak.

About that Day Fortnight from our Beginning, I was alarmed betimes in the Morning, that the Salivation was entirely stopp'd, and they thought him dying; and
that

VENEREAL DISEASE.

that in Truth so he was. I found his Pulse high and full in a great Sweat, uneasy and delirious. I injected a Glyster that came away presently unaltered. Gave two or three Spoonfuls of Julap *in languoribus*: The Sweats continued all that Day, so as to wet the Bedding through, and died in the Evening.

REMARK *first*. That emaciating Habits with or without the Lungs affected, (worse if they are, and the Consequence of playing with Mercury,) it is a dangerous Circumstance to undertake a Salivation upon. A good Regimen, medicated Drinks, and keeping the Body constantly purging, are the proper Means; and if a Person will sacrifice himself, let him do it by others Hands.

Second, When there is a Cough, the Spittle bloody, Ulcers, or the Mind uneasy, thin and emaciating, the Reasons are still stronger against Salivating; because they may be justly suspected to have received new Force, from undue irregular Courses of Mercury; for although it be one or other the most effectual Medicine, in all Venereal Complaints: Yet, if through any peculiar Dyscrasy, or ill-timed Administration, which may be called so here, from a long Familiarity with the Medicine, it never operates kindly towards the Mouth, but either kills, or renders the Distemper more pertinacious. Hence in some Venereal and Strumous Disorders, a Salivation (such as could be raised) has often made them more Intractable.

Third, A good Prognostick in these Mercurial Courses, is when the Glands of the Mouth are soon wounded, and the Discharge by Ulcers (if any) are lessened immediately, and drying up; but, if contrarily the Mouth remains unhurt, and they Increase, it is best to strike off early, to give no more Mercury than is within your Power and the Patient's Strength to purge off again; such must be contented with Palliatives till a better Opportunity.

Fourth, The Pulse is much stronger after swallowing Mercurial Medicines, at the same Distance from Death, than under any other Circumstance, and is not a proper Measure to judge of a Patient's Strength.

HISTORY III. Miss E. C—

After the Cure of a Clap (as called) broke out with Ulcers *inter vagina*, Nodes on her Shins, and excruciating nocturnal Pains.

I purged, and began with *Turb. Min.* to raise the Salivation, preferable I have already said to *Calomel*, with Patients who have lately been in a mercurial Course, or are apt to purge. This revulses by giving a Vomit or two, and when the Ptyalism is once commenced, you may pursue with this or that.

September 11. *Turb Min.* gr. v. cu. *Syr. Caryophill. F. Bolo.* with this she had one Vomit and two Stools.

The 12th I gave her six Grains, and on the 13th seven, each giving a Vomit, and the last concluding without any Motion downward. Her Chops became very sore and painful, spitting much, and as yet thick tough Phlegm.

The 14th, 15th and 16th, I slid in every 24 Hours, by two or three very small Bolus's, *Calomel* gr. xx. in *Elect. Fracastor.* the Spittle thinning, and coming on plentifully.

The 17th I gave 24 Grains more within the Day, in very small Bolus's, for the easier deglutition, and left off; from which time to the 6th of *October*, she run three Pints or two Quarts, and at the height five Pints in a natural Day; declining thence with the same Gradation it arose.

Here I must leave a Caution or two, the next Night after the last Bolus, I was called up, on her having voided (the Nurse said) a considerable Quantity of Blood through her Mouth, which had struck a Consternation among her Friends; but on examining I found little, the Salivation was tinged indeed, which in so general an Ulceration of the Mouth, will frequently happen at these times, by accidental tumbling and rubbing the sore Parts too much in cleaning the Mouth; or sometimes in introducing the *Mercury* too quick, which I thought was partly the Fault here; but when little, and you are sure it's from the Mouth, is of no great Consequence; rectify the Accidents that gave Occasion, and add such Affurances

rances as may keep away Fear from operating with them.

She continued streaming with more or less Stain, till the 22d; her common Sustenance being Gruel, thin Panada, a little mull'd Wine and Water now and then, or some Spoonfuls of a Julap; and when more declined, warm Ale, Toast, Sugar Sops, &c. At the end I purged her eight or ten times with *Potio Sydenham*, the dribbling and foreness continuing a great while, and at length watted quite off; with these, and a Decoction of the Woods, living many Years in a good state of Health, and without the least Venereal Complaint.

From this Patient, and other Observations that have occurred in my Practice, I conclude a gentle Expuition, with two or three mercurial Bolus's, just to wound the Mouth to a moderate degree; and supplying a few Grains occasionally to keep it on to what length you please, is preferable (as less hazardous) then pouring in of large Quantities without Intermiſſion, as it were, to raise higher Fluxes; more liable to ill Consequence from Cold and Mismanagement. I cannot conceive where will be the Difference between running off two Quarts of *Saliva* in two Days, or in 24 Hours? Perhaps it is this Hurry, the Fall of so many Noses is owing to, the Disgrace of a Country and the Profession; because in my Opinion, the Distemper alone would scarcely ever do it; and this I ground from my Observations in Travel, that where *Mercury* is not known or much used, they keep their Noses.

SUFFUMIGATION.

Suffumigation is sometimes substituted in room of the preceding Course; and is said to remove Pains, and dry up running Ulcers, or a *Caries*, better, and with more Dispatch. Dr. Turner p. 231. has opened Nodes on the *Os Frontis*, and *Bregma*, he tells us, discharging the Matter, and with a Suffitus of *Cinnabar*, and using *Præcip. rub.* to the Edges digested out the Sordes and cured.

In the Management of it, the Patient is stripped naked, and placed on a Stool with a Hole through, under which the Fume is put: He is covered all over with Blankets, except

except the Head, (for fear of Suffocation,) which are drawn pretty close about the Neck to keep the Fume in. When Sweat begins to come, he must be put to Bed, and there well covered for an Hour or two; and this repeated six, seven, or more Days, according to the Urgency of the Symptoms. The Fume is made of *Cinnabar*.

℞ *Cinnabar. factitiæ* ʒiiss. *Thuris, Styracis ana* ʒj. *M. F. Pulvis.*

℞ *Cinnab.* ʒij. *Styrac. Calomit. Nucis. Moschat. ana* ʒij. *Benzoin* ʒiiij. *cum Terebinth. F. Trochisci.*

A Fume may be advantageously used also, in a Venereal Exostosis. The Original præternatural Ones are of the same Colour, Make and Substance, with the rest of the Bone, and without Pain. These with great Uneasiness from the Distention of *Periosteum*, by the Acrimony of the nutritious Juice in these Taints; and fall rather here than there, as the Bone from any Cause becomes accidentally weaker in one Part than another.

Bellost's Pill.

Mr. *Bellost's* Pill comes recommended as an excellent Medicine in pocky Subjects: Dr. *Turner*, in his Piece against Crude Mercury, commends its wonderful Success in Nodes and Scabs, (p. 176.) but generously owns he did not find it always to have the same Effect, and was very lately forced to salivate two Patients after a great Number of them had been taken ineffectually.

The Pill, as transcribed from the *Strasburgh Dispensatory*, is,

℞ *Troch. Albandal. Diagred. Sulphurati Pulv. Jalappæ, Argent. vivi a* ʒj. *Terebinth* ʒij. *M. Inserviunt præsertim in morbis Venereis. dentur ad* ʒj. *vel. ad* ʒij.

Dr. *Turner* alters the Composition in his own Practice thus: He incorporates ʒij. of Quicksilver with ʒss. of Turpentine; and having rubbed it in a Mortar, into the most imperceptible *Moleculæ*, he adds *Pil. Cochis min.* ʒss. or *Syr. è Spina*, with as much Crabs-Eyes as will bring it

it to a Pilulary Consistence. Of this he makes twelve Pills, to take one every Morning and Evening; which gives two or three Stools, without Gripes or Sickness: If he would divert its Operation to the Pores, he directs large Draughts of hot *Guaic Decoction* after the Evening Pill, and the Patient to be covered very close.

From both their Writings I shall make an Observation or two for Practice.

First, The Mercury, thus mixed in Pill, is on both Sides acknowledged one of the greatest Medicines in the *Materia Medica*; both, I say, as it is a Pill; for *Bellost*, in all the Cures he historizes (except in the *Volvulus**,) ever gave it so; and calls it *Crude* up and down his Writings, as I take it, only in Opposition to those Preparations by Fire and Sublimation in Chymistry, that alters it into a Poison: Nor can I see one Word in him (excepting as above) that gives Approbation to the present Humour of swallowing it in Substance.

Secondly, They say, and very justly, that besides the Pills peculiar Efficacy in pocky Symptoms, its Gravity and Sphericity, when well divided by an assiduous Trituration, will be capable of entering the Lacteals, Lymphaticks, and minute Vessels of the Body, (though crude, it hardly ever can,) and consequently becomes thus the most powerful Deobstruent in Nature; will remove, if removeable, all acid Coagulations, glandular Obstructions, stubborn cutaneous Diseases, *Scropula's*, congested and cold Tumors. To these Mr. *Bellost* adds, that his Mercury (*i. e.* his Pill) has cured the Stone, Gravel, Retention of Urine, Cholick, Gout, *Scirrhus* of the Liver, Wens, *Carcinoma's*, Tetters, Leprosy, *Sciatica*; even has made, or can make the Blind to see, and the Crooked straight; and that in a little Time, and with a small Number of them.

We may allow a little Exaggeration to a Medicine a Man is fond of, and perhaps the Inventor. But,

Thirdly, what I mind is, that both these Gentlemen found it apt to salivate. Dr. *Turner* says, that twelve of his Pills raised, and six more, continued a Salivation three Weeks †. And *Bellost*, that it once raised a Salivation,

* Vide *Hospital Surgeon*, Vol. II p. 56. † *Turner*, p. 159.

vation, which, he says there *, was the only Time he ever knew it produce such an Effect, though he had given it for above six Months together. And yet, a little farther †, very idly contradicts this, adding, it had produced the same in himself, and others.

From this Effect it is justly deduced an excellent Pill; and is a Proof, that, like our old standing Preparations, (*Calomel. Merc. Dul. or Turbith.*) we may so judiciously mix it with purgative or sudorifick Ingredients, as to direct its Operation through the Intestines, or by the Pores, as we would have it a Cleanser or Alterative; and by the same Judgment may give its Escape through the Glands of the Mouth: *Where, after all that can be said of either, they will operate most effectually, and to Purpose.*

So far of the Pill or Mercury individuated: But as it happens to be interwoven in the late Controversies of the good or ill in swallowing it Crude, I cannot help taking so much Notice of the Subject, as I apprehend may be useful: Dr. *Dover*, who is the most fashionable Physician on this Head, gives it ʒi. ʒj. and in some Cases two Ounces unmixed with any Thing in a Day, for two Months together; and this, according to his Certificates, in Gravel, Cholicks, Pains of the Side and Stomach, Reachings, Gout, Cramp, Palsy, &c. || and more particularly in the Asthma, where it is said to do Wonders.

I shall recite the Doctor's Explication upon the Relief it gives this last Distemper, with what I have heard of his Patients from Time to Time in Confirmation; making occasional Remarks thereon.

"Whatever, says he, (*P. 27.*) keeps the Lungs cool, "is the only Way to cure Consumptions; and that he "has of late experienced crude Mercury to be the most "beneficial Thing for the Lungs, taken ʒj. every "Morning."

This is confirmed to us in his Legacy, by Mr. *La Port's* and other Certificates, and to do the Medicine Justice, I have heard several afflicted with Asthmas, confess they have found great Relief by swallowing it crude:
Not

* *Hosp. Surg, Vol. II. p. 40.*
Legacy, p. 169. Edit. 12mo.

† *Ibid. p. 86.*

|| *Le-*

Not cured perhaps, but the Periodical Assaults of that Distemper have been much easier. *Hukins's* Case transmitted by Dr. *Turner* an Antagonist, adds to the Recommendation.

This Man had for five Years Periodical Fits of the Asthma, very severe; they begun (says the Ephemerides) some time before the vernal Equinox, rising to its height in Summer, and abating about *Michaelmas*, the Consequence at first of a great Cold taken.

In *January* 1732, he begun with ʒj. of Crude Mercury every Evening, an Hour before Supper, and two or three before Bed-time; and by *March*, (in which Month for four Years past he had been to Appearance dying with the Malady:) He eat and drank his former usual Diet, kept his Bed a Nights, and slept soundly, which he was not able to do before at this Season, without Danger of Suffocation; and not only relieved of the Symptoms, but became strong and active, going to his daily Labour, &c.

From such like attested Reliefs, though there was added *Bellost's* Pill and *Æthiops's* occasionally in the Cure, yet the crude Mercury being chief and always a temporary Case, I shall according to my Capacity unfold the Manner whereby 'tis compassed, and that is, *not by cooling a distempered Lungs, as Dr. Dover styles it*; hardly to be comprehended, but is from some sort of irritative Power by means of the *genus nervosum*.

To explain this, we must consider how various are the Ways of straitning the Breast, and bringing on *Asthmatick* Symptoms. These Patients I imagine are not always labouring under distempered Lungs, seldom or never primarily. An ill Construction or Formation of the Part, a prone Position, Tumors or Inflammations on any of the Members or Parts touching upon, or bounding the Cavity of the Breast, particularly what hurts or convulses the *Diaphragma*, straitens its Capacity, or that of the *Aspera Arteria*, hinders their full Expansion as in *Angona*, Pleurisy, &c. or, increases the Blood's Motion or Viscidity, will more or less produce Asthmatick Symptoms; so will Flatulencies of the Stomach, the inverted or convulsive Motions of the Fibres of its Coats; or of those constituting the *Diaphragma*, or a Dropsy in either Cavity. Now, if one or other of these Causes exist,

exist, as they commonly do, then the Properties of Weight and Coldness in Mercury touching the *Plexus Nervosi* of the Stomach, so large about the Orifice that *Van Helmont* took it for the Seat of the Soul; it may have an influential Power by a Communication of Nerves from the Parts serving to those obstructed Offices.

By the same Rule the swallowing of Quicksilver, must be good in all Hysterical Cases, the *Plexus Nervosi* of the *Hypocondria* and *Mesenterium*, giving several Branches to the Bottom of the Stomach; from whence this Cold and Weight may extend some peculiar Vertue for quelling the disorderly Motions of the Spirits; however the Matter does not lay so much in explaining how it is done, as in Experience and the Truth of the Facts alledged here, in Favour of Mercury.

That it should ever pass into the Blood, thus administered, seems from the Nature of the Thing impossible; and especially when it so evidently passes through the intestinal Canal *unaltered, and collected almost in the same Quantity it was swallowed*, what little is wanting may be accounted for by much clearer ways than its entering the Lacteals.

Dr. *Döber* in his Legacy, indeed often insinuates its entering into the Mass of Blood, not comprehending, I suppose, any other way of compassing a Cure. Mr. P. Affention, (p. 196) with others, certify, that they not only had a salutary Spitting from taking Quicksilver, but observed small Globules in the Sediment of his Urine. *Ezekiel Wallis, Richard Freeman, &c.* (p. 204.) assert the same; *The Doctor making no doubt, but that if proper Glasses were used, Quicksilver might be seen in the Urine of almost every Person that takes it, in a greater or lesser Quantity*; but then he makes us wonder again, that he could not be able to assure so material a Point from his own Experience, having taken crude Mercury himself upward of 46 Years. (p. 201.)

Dr. *Turner* perplexes this Part pretty much, he thinks it very unlikely (p. 136.) that Mercury should pass the Lacteals, bringing for this End an Experiment of the Intestine of a Bitch, into which they had poured a Quantity of Crude Mercury, and then pricked with a Needle, a few Globules would instantly follow, and after that none but on hard Pressure both above and below. Yet at p. 227.

gives the History of a Woman flung into a deep Salivation, by taking about ℥j. of Crude Mercury. And also of a Gentleman who had took ʒxviii. These Relations indeed are upon the Credit of others, and the Woman had taken *Mer. Alcalifat*, so that on the whole of his Argument, I rather think he disbelieved this Effect, and thought nothing was to be trusted in it but what Experience and Trial alone could justify; in short, the true Criterion of all Medicines, every Judgment else being uncertain and quackish; wherefore to throw in my own Sentiments in the Dispute, I am of opinion, notwithstanding what has been writ upon the Volatility and Penetrability of Quicksilver, *That swallowed it exerts its Effect in a human Body by its Properties of cold and Weight, on the nervous Coats of the Channel it passes through.* To say it impregnates Water when boiled in it, that 'twill transpire through Quills, Parchment, or Leather, are Facts of slender or no Proof, nor if true, could it impart any thing to the Chyle designed in the Legacy, to facilitate a Belief of its getting into the Blood, without which, in his Thoughts, it could not answer so well to this Catalogue of Cures.

* The Ladies at *Smirna*, he asserts, and in the *Molucca* Islands, take it as a Remedy for Barrenness, ʒj. every Day for a Month or two.

In the † Green-Sickness, he gives the Patient every Morning ʒi. for three Weeks, it opening all Obstructions, and making a pure Balsam of the Blood.

‡ In the Small-Pox, Mr. *Curr* that had no Ptyalism at the usual Time: He gave him Mercury; but that not answering, he purged him every Day till the Danger was over.

§ Gout and Gravel cured by taking of Mercury: The Stomach here continued tender after swallowing a Dose of ʒij. and a Return of some small Pains; but then the Man had been twenty Years thus out of Order.

|| In the Stone, he says, Please to take ʒj. of Quicksilver every Morning for a Month.

Ema-

* *Legacy*, p. 47.
|| p. 191.

† p. 48.

‡ p. 48, 79.

§ p. 34

Emaciations, Pains, and Numbness of the Extremities *, went off twice, by taking ʒj. every Morning: The third Morning the Fingers and Toes tingled with Warmth, which had not been felt for many Weeks, and he had lost the Use of his Hands.

He cured a Horse of the Glanders with Quicksilver, and a Lady of Pains at her Stomach.

At (p. 37.) he cured a Woman of seventy Years of Age in ten Days, who had fell down with an entire Loss of Sense and Motion on one Side.

Scorbutick Swellings and Pains removed, at taking ʒf. every Morning for twelve or fourteen Days.

In Vermicular Diseases, Reachings, Nausea's, cholical Pains and Diseases of the Stomach, it exceeds, says the *Legacy*, all other Medicines, taking ʒj. a Day. Dr. *Turner* in his *Historical Memoirs*, and other Gentlemen, I have heard commend it on these Occasions.

In the *Volvulus* he prescribes to a Pound or a ʒbif. *Ettmuller* gave ʒiij. at a Time till a Woman with this Iliack Passion had swallowed ʒxxiv. raising he tells us a little spitting on the fourth Day, and made a copious discharge downwards, the Method by which it accomplishes the End here, is the *Pondus* as Dr. *Turner* expresses it, restraining the inverted peristaltick Motion or keeping down the Fund of the Ventricle, whose nervous Coat, in Nausea's or Reaching, got by Pain, Drunkenness, and the like, acquire this inverted Motion: To this might be added (if not too light a Reason for so weighty a Medicine) its falling thump upon the Stomach in Swallowing. There is something similar to this in Mr. *Hill's History of Turkey*: An *English* Merchant getting a Cure there for the Gout by a Bastinado upon his lame Foot. A leaden Bullet, if objected to be as good a Remedy on this Foundation, would not answer the same Purpose; because it cannot so easily pass with the Contents of the Stomach, as Mercury, which is a Fluid: To convince in this, take the two following short Stories:

First, James Day, one of our Sailors, swallowed a Musket-Bullet accidentally, which neither Vomit nor Purge removed: It lay a Load upon his Stomach, with almost continual Uneasiness; and Nauseating till that

S 2

Day

VENEREAL DISEASE.

Day Month, when in a Fit of Coughing he brought it up, and was immediately easy.

Second, Mr. *May* going to speak hastily while he was holding a leaden Ball in his Mouth, it slipped down, lay fore and uneasy at his Stomach, giving frequent Cholicks, and not removable with any Evacuation; but remitted, when grown more familiar to it with Time, till after nineteen Years it was voided in just the same Manner, by a Fit of Coughing.

This may suffice upon the Controvertists on the Usefulness of taking Crude Mercury, and the Possibility of its doing Good in some Cases: But when the Hazard of its doing so is compared with the real Injuries suffered from it, and those undeniable, there is no room to hesitate about the Danger, especially in a long Course and Retention; for when it comes to accumulate the Weight and Coldness redoubles; which joined to the Motions of the Body, and Stops made by the Anfractuosities of the Guts, may produce great Mischiefs.

Dr. *Turner* * reckons up *Tormina*, Vomiting of Blood, voiding a great deal by Stool, very great Pains in all Parts of the *Abdomen*, unusual Weight, and Uneasiness at the Stomach; Head-ach, large Fluxes of clotted Blood; and, to sum up all, a Mortification of the Intestines.

Mr. *Booth*, the Tragedian, to prevent the Return of an Intermitting Fever, by Dr. *D*——'s Advice on the Third of *May* began a Mercurial Course, and by the Eighth had taken ℥ij. within 3ij. at which Time he began to complain of a very great Pain on the Forepart of his Head, and as great in his Bowels, with an universal Uneasiness of his Body; insomuch that he could not remain one Moment in the same Posture, had voided none of the Mercury till this Day. On the Ninth, Sir *Hans Sloane* being sent for, and finding the Passage bound up, prescribed a solutive Draught; and that ineffectual, a purging Clyster. On the Tenth, being still costive, and the Symptoms increasing, ordered another purging Clyster, &c. but on this Day he died. On diluting the Fæces with Water, there was collected about ℥ss. of Mercury.

On opening his Body, and ripping up the *Rectum* and the other Intestines with a Pair of Scissars, there was found

* Dr. *Turner*, p. 148, 151, 210, 214, 217, 269.

found little Excrement ; but the whole inside Track lined with Crude Mercury, divided in Globules about the Bigness of Pins-Heads : The *Rectum* broke like Tinder, and sent forth a most cadaverous Stench. The others were not glazed over with Mercury, as had been said ; for they were *as black as your Hat, and so rotten, they would not endure the least straining without breaking in Pieces.*

To this may be added what Dr. Turner says of an Illiacal Subject he dissected, who had swallowed the Day before *℥ij.* of Mercury ; that he found the whole Mass that had been taken, at the Obstacle ; which was *mortified all round* ; that endeavouring to draw the inverted Part out, it *rent* ; but *whether to be imputed to the Mercury, or intense Degree of Inflammation, declines pronouncing.*

These latter I take to be the true and genuine, though not the constant Effects of swallowing much Quicksilver ; what he instances of Blood from the Lungs by Vomit, from the Brain by the Nose, Inflammation of the *Tunica Adnata*, putrid Sloughs in the Mouth, and the like, remain with me, as yet, dubious Consequences.

From the Whole, if so obscure a Person might slide in his Advice about this modern Practice, Mercury should be never taken but in *Extremis* ; as the Doctor observes in Mr. Curr's Case, (p. 79.) in violent convulsive Pains of the Stomach or Intestines, and when other Means has failed : For if any Credit may be given to a Number of Complainants, it will relieve, and possibly, by the immediate Contact of its Weight and Coldness on the nervous Coat, by which Means it repels the Spirits, rioting in that particular Plexus of Nerves, and not by any entrance into the Blood, with which if it could mix, it would rather destroy than cure.

We see that by grinding Mercury into indivisible Particles by manual Labour, as in the Ointment for Salivation. The *Æthiops Mineral. Mer. Alcalifat*, or Pill, will fit it for entering the Lacteals, and mixing with the Mass of Blood. Fluxes having often arisen upon the regular Administration of them. And what it may be proper to caution here ; sometimes Tremor, Emaciation, Convulsion, and Giddiness, upon a Protraction or Irregularity of the Course, externally or internally used, pointing out the Danger that must arise from admitting it

into the Blood. I know a Person now, thrown into a convulsive Tremor like a strong shaking Ague, after taking near 3xij. of *Æthiops*. The Fits not at regular Periods like that; the two first being at a Month's distance. The second and third at a Week, and then two or three Days together: The Cold and Trembling extremely great as well as universal, and ending in violent Sweats; they have abated with Purging well, and a long course of *Flos Sulphuris*: Yet left so ill an Effect, as to have returned every Winter (more or less) for three Years past.

Fuller in his *Medicina Gymnastica*, gives this Account of himself; that the outward Use of *Mercury*, had brought Giddiness and Convulsions in the Capillaries of his Eyes, his Fingers, and Pectoral Muscles, with Shortness of Breath, &c. *Turner* says, *Mercurial* Cosmeticks and Girdles do the same: All of them incontestable Proof of *Mercury's* intimately mixing this way with our Constitutions, and may be managed to very great Ends. But taken in the Aggregate makes a very wide difference. *Quicksilver* and *Chyle* seem as unfit Bodies for incorporating as Iron and Clay. *Helvetius* observes, nothing but *Chyle* or *Similar* to it, without a Prodigy will pass the Lacteals. *Its like a Cloth dipped in Oil, which will filtrate only that, though there be a mixture of Wine.* To this we may add the mutual Attraction of their Particles, which in so capacious a Channel as the Intestines, will always incline them to unite their Globules there, rather than try to pass the imperceptible Orifices of the Lacteals; which if they could do, would probably end more often unhappily than at present it does by bursting them. The *Mesentericks* and other tender Blood Vessels, causing *Hæmorrhages*, insuperable Stagnation, Inflammations, Gangrene and Death. Mr. *Turner* doubts whether testaceous Powders ever come to mix with the Blood (p. 127) Yet with an Inconsistency too common, tells us, that in a strumous Patient he dissected, he found the Gritt coacervated in the mesenteric Glands.

The manner of *Quicksilver's* operating in Dr. *Dover's* Cures, when truly testify'd; must be as I have said above by some influential Power from the Nerves of the Stomach being touched, to the Parts disordered. We see a strong Vomit or Poison, taken into the Stomach; in a little space of Time, will communicate the Convulsion begun there,

there, to the most distant Parts of the Body. Any Resolutions taken in after severe and long Fasting, immediately enlivens and strengthens all the Parts, long before the Food can be distributed through the Body. And Water or any weak Liquids, sweats or promotes them when begun instantly, and this by the Continuity of Life; whereby the Center being touched, or a particular large Plexus of Nerves, irradiates to the Confines, or to others more immediately communicating.

Since then the Operation of crude Mercury, by what we yet know of it, is compassed by *Weight and Coldness* in the Channel it passes through. It is most likely it will hit off the Distempers of those Parts best, that have a Participation of the same Nerves.

When therefore a Patient has felt the Case he looked for, it would be judicious I think from the whole of what I have observed, to be contented with the fewest Doses. The tragical Symptoms above-mentioned, were no doubt the effect of Quicksilver swallowed crude. And when it does not come away with the ordinary Stools in a continued Course. It is wise to take the Alarm and break off. *Quære* whether by long Use it may stop and coacervate in the *Intestinum Cæcum*, producing (when most unlooked for) the same tragical Symptoms as in Mr. Booth.



XVII. *Prescripta aliquot in Usum Classis.*

Elect. Scorbutic.

℞ *Elect. Lenitiv.* ℥j. *Crem. Tartar.* ℥iss. *Spt. Cochlear.*
q. s. F. Elect. De quo sumat Bolum omni mane &
Vespere pro uno mense.

Multum conducit (labore corporis) ad curationem hujus morbi.

Elect. Dysenteric.

℞ *Conf. Rosar. rub.* ℥iv. *Diascord.* ℥j. *Bol. Armen. Pul.*
Sang. Dracon. Nucis Moschat Pul. a ℥j *Cinnam. bene*
Pulverisat. ℥ij. *Syr. E. Meconio q s. F. Electua-*
rium.

Elect. Febrifug.

℞ *Pul. Cortic. Peru.* ℥ij. *Sal. Absynth.* ℥ij. *Sal. Tartar.*
℥j. cum Syr. Caryophyll F. Elect.

Elect. Pforic.

℞ *Ethiops Mineral* ℥j. *Antim. Diaphor.* ℥ij *Conf. Cynof-*
bat. ℥iss. *sumat quantit. nucis majoris omni mane &*
vespere.

Conf. Alexiphar.

℞ *Pul. e chel. Cancror. Simpl.* ℥iss. *Ther. Andromach.*
Conf. Lujulæ a ℥ij. *Syr. Limon. q s. F. confect. in Vase*
bono obturato servanda.

Mixtur. Anti. Emetic.

℞ *Aq. Menth. S.* ℥ij. *Vin. Alb. cum Menth. impregnat.*
℥iss. Sal. Absynth. ℥j. *Syr. Limon. de Mecon. a* ℥ij. *F.*
Haust.

Mixtur.

Mixtur. Febrifug.

℞ Aq. Hord. ℥iij. Aq. Epidem. ʒvj. Sal. Absynth. ℥ij.
Spt. Vitriol. g. xx. sumend. in Lecto, hora una ante ex-
pectatum Paroxysmi accessum.

Bolus Febrifug.

℞ Cort. Peruvian. Subtiliss. Pulverifat. ʒj. Ther. An-
drom. ʒj. Spt. Sal. Armoniac. q s. F. Bolos N^o 2. qua-
rum unus sumend. Horis duabus ante paroxysmum in
Lecto, ad sudorem provocand. Initio paroxysmi alterum,
continuand. ad duas vices Remedium efficacissimum me-
rito habetur.

Julap. Analeptic.

℞ Aq. Hord. ℥ij. Aq. Epidemic. Ther. a ʒiij. Syr. Ca-
ryoph. ʒij M. F. Julap Concedi potest ad Cochlear iij.
quartis vel sextis Horis.

Infusio Pectoralis.

℞ Suc. Liquir. ʒj. Sal. Tartar ʒij. Aq. Hord. ℥ij. In-
fund. simul in Balneo Mariæ.

Hauft. Paregoric.

℞ Aq. Font. ʒij. Aq. Ther. ʒf. Syr. de Macon. ʒij. L.
Liquid. g. x. M.

Hauft. Traumatic.

℞ Cerevis. Prussicæ ℥iij. Syr. Symphiti Croci a ʒf. Sperm.
Cæti ʒj. M.
℞ Aq. Hord. ℥iij. Sperm. Cæti ʒj. Aq. Ther. ʒf. M.

Pul. Traumatic.

℞ Terr. sigillat. Lap. Hibern. Sang. Dracon. Mummie.
Sperm. Cæti. a ʒj. Pul. Rhabarb. ʒf. M. divid. in
Chartulas. iij. quarum una sumend. 6 a quaque hora in
haust poschæ. vel Cerevisiæ seu in forma Boli cum Ther.
Venet.

Decoct. Amarum.

℞ Sem. Cardui. Rad. Gentian. Incis. enulæ Campan. a
ʒij. summitat. Centaur. minor. p. Flor. Chamæmel.
q s. coquant. in Aq. Font. ℥iv. ad ℥iij.

Decoct.

PRESCRIPTA ALIQUOT IN

Decoct. Solutiv. commun.

℞ *Rhei Elect. Incis.* ʒ℥. *Fol. Sennæ* ʒiij. *Sem. Coriand.*
contus. Fœnic. dulcis a ʒ℥. *Crem. Tartar.* ʒvj coquant.
parum simul in Aq. Font. ℥iv. Colatura edulcoretur pra-
re nata Syr. e Spin.

Suppositor Eccoprotic.

℞ *Pul. Aloes Hieræ Picræ vel alumin. q s. Albuminis ovor.*
M. ad aptam Consistentiam.

Pil. Panchymag.

℞ *Mer. Dul.* ʒij. *Pil. ex duobus* ʒiij. *Rudii Rez. Jalap.*
Crem. Tartar. a ʒij. *Ol. Anisi* ʒ℥. *cum q s. Syr. E.*
Spin. F. Massa. Pil. Dos. ℥j. ad ʒ℥.

Enema Commun.

℞ *Aq. Font. ʒx. Mell. Op. ʒj. Sal. Commun. ʒ℥. misce-*
antur simul bene ignis calore.

℞ *Aq. Marin. ʒx. Ol. Chamæmel ʒj. Sacchar. Nig. ʒij.*
M.

Enema Terebinth.

℞ *Urin. human. recent. ʒxij. Terebinth. venet (cum vitell.*
Ovor M) ʒvj.

Collyrium. Commun.

℞ *Aq. Font ʒiv. Vitriol Alb. gr. xij.*

℞ *Aq. Ros. ʒiij. Troch. alb. Rhaf. ℥j.*

Gargarisma Commun.

℞ *Aq. Font. ℥℥. Mell. Rosar. ʒj. Sp. Vitriol. g. xx. M.*

Ol. Epulotic.

℞ *Vitriol Alb. ʒij. Vitriol. Roman. Alumin. a ʒj. sol-*
vuntur & coquantur in Oleo & Aq. Font. a ℥℥. ad Con-
sumption. ultimi.

Ung. Scorbutic.

℞ *Ung. Martiat. Dialthæ a ʒviiij. Ol. Hyperic. Terebinth.*
a ʒj M. F. Liniment.

Ung.

USUM CLASSIS.

267

Ung. Cata. Psoras.

℞ U. Popul. Axung. Porcin. a ℥j. Flos. Sulphur. ℥ss.
Mer. sublimat ʒss. Ol. Tereb. q s. F. Ung. Molle.

Ung. Digestiv.

℞ Linim. Arcei. U. Basilic. a ℥j. Ol. Tereb. ʒij Hyperic. Lini. a ʒiv.

℞ U. Basilic. Liniment. a ʒiv. Ol. Hyperic. ʒij.

Ung. Desiccativ.

℞ U. Desicc. rub. Diapomphol. Basilic. a ʒj. M.

Ung. Detergent.

℞ U. Digestiv. Terebinth. venet. p. æ. M.

Ung. Pleuritic.

℞ U. Dialthæ Ol. Tereb. a ʒj. Camphor. ʒss. M. Spirituosa unctuosius admista multo potencius mederi possunt Dolores quam per se sola usurpata.

Restrictiva Maxim.

℞ Albumin. Ovor. N^o 2. Acetum vini. ʒiij. Pul. Restrings, q s.

Ceratum Commun.

℞ Empl. de Minio Paracels. a. p. æ.

Empl. Defensativ.

℞ Empl. Diapalm. ʒiv. Ol. Rosar. ʒss. Pul. Boli. ʒj. M. & extende super Alutam.

Empl. Anodynum.

℞ Empl. Sapoins ʒiij. Oxyroc. Picis Burgund. ʒij. Opii solut. ʒij. liquefiant omnia simul in Massa.

Cataplasma Resolvens.

℞ Mica Panis. Farin, Fabar. p. æ. coquantur in Aqua Font. q. s. ad Consistentiam aptam deinde adde Ol. Rosar. Cham. a Parum.

Pro

PRESCRIPTA ALIQUOT, &c.

Pro Fotu.

℞ *Ex quibuscumque Herbis sequent. Absynth. Origan. Thym. Centaur. Betonic. Salviæ. Hyperic. Menth. Rosmarin. Lavend. Abrotan. Sambuc. M. iv.*

Ex hisce floribus, Balaustior. Rosar. Rub. Cham. Melilot. p. iv. ex seminibus quatuor calid. major p. ij. coquantur omnia in Lixivio Cong. iij. colatur, adde Spt. Vini q s.

Usurpetur cum Stuphis Laneis calidissime intinctis & expressis, si Spirituosus requiritur, adjice Spt. Sal Armaniæ. ℥j. Camphor. ℥ss.

Aq. Calcis.

℞ *Calx viva ℔j. Infunde Aq. Bullientis ℔viiij. Depuretur & Decant. pro usu.*





XVIII. ILLAP SIS in AQUIS

SEAMEN by various Accidents fall into the Sea, where they miss being drowned, perhaps, or any other Injury, more than swallowing a great Quantity of Sea-Water.

In this Case, it is usual to lay the Person over the Bilge of a Cask, the easier to disgorge, and has some Reason in it, considered with the Circumstance. If the Stomach and *Abdomen* be very full, and the Patient senseless as it were, the jumbling and rowling quite suffocates; but when took up with Signs of Breathing and Life, the reclining of the Breast on a Pillow in this manner, with the Head downward, and touching the Swallow with a Feather or armed Probe, dipped in a Solution of *Sal. Vitriol.* will make him throw up the Water; which when he has pretty well done by twice Vomiting, he should be shifted dry and put between his Blankets, with a Draught of warm Wine, close covered, till he finds Warmth and Life returning, and then give a Clyster. Next Morning if there be any Complaint of Bruise, Hurt, or any Pain affecting the Belly or Breast, Bleed, give a Bolus of *Sperm. Cæti.* and *Ther. Androm.* continuing the Patient afterwards to good Broths and the traumattick Powders and Decoctions of *Bates* or *Fuller.*



XIX. GANGLIONIBUS.

GANGLION. *Nervi est nodum Concretis, ex-
ictu aut labore proficiscens, plerumq; vero in ma-
nus junctura qua cum brachio committitur, &c.
(Ægineta).*

A Weakness of the Nerve or Tendon, from
some Contusion, Extention, Blow, or Labour, by which
Means an Expuition of the Lymphatick or nervous
Juice, concretes itself into a Ganglion or Knot; fre-
quentest in very young or old People, where the concoc-
tive Powers are defective, remain therefore longer with the
Aged, where the Power is not recoverable, but with lit-
tle Uneasiness and that on Pressure.

The Cure is in warm Emplaisters,

℞ *Gum. Ammoniac. Sagapen. in Aq. Vitæ. solut. Coque
in cineribus calidis ad fermam Empl. sub finem adde
Sulph. viv. pul. ʒi. Or,
Empl. de ranis cum Mercurio.*

Such like are supposed to warm and rarify the obstruc-
ted Matter, to mix again with the reflux Blood.

Of the same Design but more serviceable, are all Fric-
tions with the Hands; dry Cloths, Fastig-Spittle, *Aq.
Hungariæ*, or other Spirit.

When the Ganglion has been on the Back of the
Hand, I have spread the Palm on an even flat Surface,
and putting a Book on the Tumor, (which is a little
yielding and not too hard) struck upon it with my Fist.
The exsudated Matter has loosened by this Means, and fell
in with the Circulation, by minding to bind down a thin
Plate of Lead to assist the Tendency.

If the Ganglion is pendulous, and with a slender Nick,
it may be taken off by Ligature as in Wharts.



XX. VERRUCÆ & CLAVI.

WHARTS are hard Excrefcencies of the *Cutis*, when it has been injured by Cold or Prefſure; for which Reaſon they rarely appear any where but in expoſed Parts, ſuch as the Hands or Face, and have ſometimes a ſmooth, ſometimes a chopped Surface, commonly without Pain, though now and then there is an Exception; when they happen to be ſituated on ſome tendinous Expanſion, about the Joints of the Fingers, ſome reckon the *Condyloma Ficus* and *Criſta* of this Species.

Earum differentia a figura præcipue deſumpta & hæc etiam pertinent Condyloma Ficus & Criſta ſive excreſcentia quædam in ano, atque circa mulierum pudenda.

The Indications are *Amuleta*, *Ligatura*, *Cauteria*, *Cauſtica*, all of them having been uſed ſucceſſfully. Charms from ſome Hands I have known to hit Nine in ten Times; but when Medicines are to take place, it is generally Cauſticks. *Succ. Cataputiæ*. *Liquor Limacum cum ſal. Pet.* *Ol. Vitriol. Aq. Fortis. Lap. Infernal. Cauſtic. lunare. Aq. ex calce uſta.* Thoſe of a remiſſer Degree may be tryed firſt, and failing the ſtronger.

Scribit Fabricius, exterminaffe contuſa pertulaca, vel Sabina pulveriſata ſubinde impoſita. Alii erodere eas tentat vel Vinculo, vel exciſione, vel uſtione; & hic lamina ferrea quædam pertuſa ita Verrucæ adaptari debet, ut foramen Verruca exſtat & emineat, nihil tamen cernis circumpoſitæ appareat hinc candente ferro verruca adurenda. Egregie etiam carnem luxuriantem abſumit, Ulcera mundat & Cicatricem induit. Aq. Viridis, viz.

℞ Alumin. crud. Virid. Æris a. ʒij. coq. in vino albo ʒxviii. ad quartæ partis conſumptionem, Coletur.

VERRUCAE ET CLAVI.

Deinde R Camphor. 3j. Solvatur in Spt. Vini. 3℥. & colaturæ priori adde.

When the Potential is used, we must from Day to Day scrape off the Crust made by the Caustick, and rub the remaining Root till the whole is destroy'd.

Clavi. Begin in the Cuticle, from outward Compression, and are hard or soft, with their Basis outward. The former shoot in, narrower like a Pin or Nail, thence called *Clavi*; the soft are for the most part white and between the Toes.

The Cure is in cutting them out; in order to which, if hard they must be soaked an Hour if you have Patience in warm Water, then a dextrous Operator will loosen the Basis, and working down bring the Corn away without bleeding.

Mr. Wiseman orders the *Fovea* to be filled up with red soft Wax, an *Empl. ex pice navali. & Galban. &c.* but I never use any thing but a simple Diapalma Plaister over, and when it grows dry shift it for three Months, till the Part has its right Tensility; and if it does not prevent their growing again, it will be a Means together with keeping off Compression; to retard it a longer Time; for that little Excavation after cutting, without a Plaister receives Grains of Dirt imperceptibly, which by the Tenderness of the Place and Motion of the Foot, is soon perceived to hurt, and sets the Corn a growing again.

PERNIONIBUS.

Kibed Heels, and Chaps of the Hands and Wrists, called *Chilblanes*; red, itching, and painful, are the Winter-Attendants of tender Skins, especially Childrens, who if apprehensive of a Return every Year should guard against betimes, with warm covering to the Hands and Feet, and keeping them dry and clean.

All the Decoctions of common eatable Plants and Roots, are proper to wash with; such as the Leaves and Tops of Cabbages, Sprouts, Turnips, Potatoes, with which Meat has been boiled. Thyme, Rue, Hyssop, Rosemary, Sage, or any of the like kind boiled; and

V E R R U C E E T C L A V I.

273

to which may be added a little Brandy, to wash and foment the Heels, applying the *Residuum* by way of Pultice. Or,

*R Ceparum vel Raparum tost. solum; vel cum terebinth,
q. s. in forma Cataplasmi. applicat.*

These and the like bound on, allay the Itching and Pain that a Retention of the Humors creates, and transpires the stagnating and sour Juices; for as Cold, Tenderness or Filth, are alone or together, the Cause of these Tumors, Warmth, Defence, and washing the Parts, is the Way to open the Pores, transpire the Humor and restore the usual Tensity to the Fibres.

*R Mannæ Thuris, Rez. Pini a. ʒij. Axung. Porcini
& Anscrin. q. s. F. Ceratum.*





XXI. AMULETA.

AMULETS bordering upon, if not the Parents of Empiricism, exact some distinct Consideration. All Remedies working Sympathetically as it were, and plainly unequal to the Effect, may be stiled *Amulets*; whether used at a Distance by another Person, or immediately about the Patient; there being various. The common are understood of something worne at the Neck, Wrists, or other Parts: By the *Jews*, called *Kamea*. The *Greeks*, *Phylacteries*. By the *Latins*, *Amuleta*, or *Ligatura*. *Catholics*, *Agnus Dei*, or consecrated Relicts. And, by the Natives of *Guiney*, *Fetishes*. Different Sorts of Materials had in great Veneration by those People, and are firmly believed to preserve from Danger and Infection, as well as remove their present Maladies.

Of very ancient Use I believe among all Nations: *Plutarch* relates of *Pericles*, an *Athenian* General, That when a Friend came to see him, and enquiring after his Health, reached out his Hand and shewed the *Amulet*; intimating the Truth of his Illness, and at the same Time, the Confidence he put in customary Remedies. They continue still, and even with us, who have thrown off Superstition, of frequent Use among the Populace: The Fanciful, the Timorous, or such who have nothing to spend in politer Physick, or hate it. Mr. *Phips*, General in my Time for the *African* Company at *Guiney*, a Gentleman of good Understanding, and that could laugh at others *Fetishing*, when he ailed nothing himself, could not help falling into the same Method with the Negroes at the first Appearance of Illness and Danger. They were not nauseous he said, cost nothing, and were at hand; a Mark, if we allow a Providence, that the Poor are equally his Care, who oftentimes cannot get, or cannot purchase other Means of Amendment. His

Example

Example with Good, constantly related from them, the propagated their Credit, I could see, with others of the Factory: And when many had apply'd them to their Fears some would succeed (as surely as if they had took *Ward's Pill*;) that Success tempted others and inspired Spirit and Courage to contend with Danger, a good Chance of itself to escape an Evil: And is very Ungracefully laughed at by Christians who think Salvation itself will be an Effect of their Faith.

Lord *Bacon* says, If a Man were to wear a Bone Ring, or a Planet Seal, strongly believing he might by that obtain his Mistress, or it would preserve him unhurt at Sea or in Battle, it would probably make him more Active and Industrious upon all Dangers; and the Effect, especially in civil Business would answer: The Audacity he thinks in some Measure, conquering and binding weaker Minds.

The King's Pictures in Gold will act upon thousands, and inspire a Courage and Industry, to undertake and overcome any Sort of Danger.—So the Amulet or Fetish is a Sort of Armour to our Fears; and those who experience Success or fancy so, strengthens their Influence with others. The Way of redoubling their Virtues being to increase their Reverence, and bring them nigher and nigher to Infallibility.

Agues have a great many; and dispersed into many Hands, on Purpose as it were, to Relieve such common Objects of Pity. Succeeding often after the Bark has failed; and when one Sort will not do, another has. *Ague* resisting Amulets, says Dr. *Willis*, have often been applied to the Wrist with Success. *Abacadabra* wrote on Paper conically Δ hung about the Neck, and repeated by a Patient, will have a good Effect. The Herb *Lunaria* gathered by Moon-light, I have been assured by a Dignitary in the Church, not only cured him of an obstinate Dysentery made into an Ointment, and rubbed warm down the Spine three times; but others from his Recommendation, *numero Deus impare gaudet*. *Naaman* was cured by dipping seven Times in *Jordan*. I had it from an old Gentleman of *Eighty*, who having spent all his Living upon Physicians, was at Length healed of a Strangury, by procuring a new Glass-Bottle never wet

inside or out ; P—g it full, and burying it in the Earth. The Pool of *Bethesda* had certain Formalities.

Dr. *Chamberlayn's* Anodyne Necklace, produced Wonders in the Mouths of Parents and Nurses for a long while ; till now that Time seems to have half destroyed its Virtue, by half destroying its Reverence. And it's not surprizing among such Numbers of Imitators ; who stealing upon such curious Discoveries, are continually inventing new and better.

The Herb *Lichen Cinereus*, (Miscellany, No. 141.) I thought had removed not only *Hydrophobias*, but prevented the Bites of mad Dogs ; or none that I have heard having been bit to any Purpose till of late. *Robert Beethem* advertises again, he cured 10 of Lord *Baltimore's* Servants in a few Days, besides 42 Couple of Hounds bit, and has his Lordship's Leave, he says, to acquaint the Publick. How wonderful soever the Cures appear, they do not out-do the Subtilty of the Poison. Symptoms not shewing themselves we are told sometimes till four, seven, nay, forty Years after the Bite. “ That the Slaver, or Breath of such a “ Dog, is Infectious : And that Men bit, will bite like “ Dogs again, and then die mad.” *Turner*, p. 411.

Calvin paid Devotions to St. *Hubert* for the Recovery of his Son thus bit as a last Recourse. The Son also performing the necessary Devotions at his Shrine, and was cured, my Author says, not only of the *Hydrophobia*, but of the worser Phrensy his Father had instilled. Externals in Children, or sick or weak brained People who are as Children working with better Effect in many Disorders of Mind and Body, than any Internal methodical Course.

There are *Cramp* Rings for the third or fourth Fingers of the Left Hand, that will remove that Pain. Myself had been plagued with it frequently of Nights in my Legs, and had it at last removed by following my Mother's Advice, of laying my Stockings a-cross on the Floor at going to Bed. If the Fancy should be worne a little with the Trick, and the Stockings growing old, it may be renewed, I believe, by consulting the Disposition of a Patient ; a Rule always to be observed in Prescription ; and then fixing on a new Pair ; a particular Colour ; a particular Time of Night, &c.

Wharts

Wharts and Tooth-ach have vanished by the same easy Craft in skilful Hands. *A. B.* will take off any Number of the former in Hands, Face, or other Parts of the Body without missing once in six Times. My Lord *Verulam* (Vol. III. of his Works, P. 234.) had above a hundred Wharts upon his Hands at *Paris*, and the *English* Embassador's Lady (then at that Court) a *Woman* far from *Superstition* took them all off; only by rubbing them with the fat Side of a Piece of Bacon, that had the Rind on; and then nailing it with the Fat towards the Sun (to the South,) upon a Post of her Chamber-Window. — In five Weeks, says my Lord, they all went away.

As this Gentleman is allowed by all, to have been one of the greatest Genius's *England* ever produced, He may help to strengthen what has been already said on the Power of Amulets. "After deep metaphisical Observations in Nature, and arguing in Mitigation of Sorcery, Witchcraft, and Divination, effects that far outstrip Amulets: He says, we should not reject all of this Kind, because it's not known how far those attributed to Superstition depend on natural Causes. *Charms have not their Power from Contracts with evil Spirits, but proceed wholly from strengthening the Imagination: In the same Manner that Images and their Power have prevailed in Religion, being called from a different Way of Use and Application, Sigills, Incantations, and Spells.*"

Imagination works very powerfully upon Mind and Body, and no doubt the strongest Ingredients in these Cures. Dr. *Strother* says, the Influence of the Mind and Passions operates on the Body in sensible Operations like a Medicine, are of greater Force upon the Juices than Exercise. The Countenance betrays a good or wicked Intention, and that good or wicked Intention will in different Persons produce Strength or Weakness of Body to encounter or yield. "Our Looks discover our Passions; there being, mystically in our Faces, says Dr. *Brown*, certain Characters, which carry in them the Motto of our Souls, and therefore probably work secret Effects in other Parts."

*Thus paler Looks impetuous Rage proclaim,
 And chilly Virgins redden into Flame :
 See Envy oft transform'd in Wan Disguise,
 And Mirth sits Gay, and smiling in the Eyes :
 Oft our Complexions do the Soul declare,
 And tell what Passions in the Features are.
 Hence 'tis we look the wondrous Cause to find,
 How Body acts upon impassive Mind.* GARTH.

Mr. Addison, upon the Power and Pleasures of the Imaginations (*Spect.* Vol. VI.) concludes from the Experience of Pleasure and Pain it administers here. That God who knows all the Ways of affecting, may transport us hereafter with such beautiful and glorious Visions, Or plague us with such ghastly Spectres, as might even suffice to make up the whole Heaven or Hell of any finite Being.

St. *Viti Chorea* ; or St. *Vitus's* Dance. These were strange Emotions People had at visiting the Shrine of St. *Vitus*, near *Ulm*, every *May*. Perhaps, something like the *French* Prophets in Queen *Anne's* Reign, or the Agitations of our first Quakers. They danced Night and Day, till with Weariness and Discomposure of Mind, they fell down as entranced, and after a Time came to their Senses again : Until the next *May* (*Flora* blooming) brought on the same Inquietude, and obliged them to seek the same round of Cure. Some place it to the Season, when the Blood is turgid, prompting all Creatures to Play, Exercise, and Wantonness. Some to a Joy resulting from their Devotion ; and might be partly one, partly the other. The Cure we see was in dancing.

Sydenham files the Involuntary Convulsions of Children towards Puberty, that are continually changing their Postures against their Will, *Chorea Sancti Viti*, (p. 421.)

Tarantula's Poison is of the same Kind ; from a Plenitude and Turgescency of the Fluids in Summer, the warm Suns rowling off their Torpitude ; which *Baglivi* assures, is to be expelled only by the Force of Musick. And what is more wonderful, particular Persons stung, are not to be eased but by particular Tunes, and particular Instruments : The Charmingest of Charms.

When

When Children receive a Benefit, the Faith of Parents acts, (*Matt. xxv. 28.*) Their Prayers are Intense, and if we believe a Providence, may give even natural Causes and Powers more Success. (*Vide Chapter of the Evil.*)

Those who explain the Effects of Amulets by Effluvia's, when worn nigh the Emunctories say, the Pores there, being more large and admissive, receive them into the Mass of Blood; and if we cannot perfectly perceive the Way how? neither can we that of Analepticks, Hystericks, Deobstruents, &c. 'tis sufficient that we find the Thing done, the one nor the other always answering their Assignments.

The learned Dr. *Willis*, in his Treatise of nervous Diseases, makes no scruple of recommending Amulets in Epilepsies. Take, says he, some fresh Pæony Roots, cut them into square Bits, and hang round the Neck, changing as often as they dry: Probably from this, was taken the famous Anodyne Necklace above, that has circulated with so much Advantage to the Proprietors, because the Doctor a little farther, prescribes the same Root for the Looseness, Fevers, and Convulsions, of Children breeding Teeth: Mixed (to make it the more wonderful) with some Elks-hoof.

Turner, though he laughs at the Anodyne, argues in much the same Manner. It is not so strange that the Effluvia from outward Medicines entering our Bodies, should work such considerable Alteration, when we see that the efficient Cause of Apoplexy, Epilepsy, Hystericks, Plague, &c. consists, as it were, in imperceptible Vapours, (*Appendix, p. 496.*)

Lapis Etites, By a like secret Method, is said to prevent Abortion hung about the Arm, and facilitate Delivery worn about the Thigh, at time of Parturition.

Dr. *Sydenham*, in the Iliack Passion, orders a live Kitten to lay always upon the naked Belly: Others have used Pigeons split alive, and applied to the Soles of the Feet with Success, in pestilential Fevers and Convulsions. The Court of King *David* thought Help communicable by external Means, or they would not have advised him to seek for a young Virgin; imagining, I suppose, the Vigour of Youth to impart Warmth and Strength to the Decay of Age. *Tobit vi. Take the Heart and Liver of the Fish and make a Smoak, and the Devil shall smell it and flee away.*

In Plagues and pestilential Fevers, many eminent Men have recommended Amulets, or * Prophylacticks against Infection. In that at *London* 1665, *Bucklersbury*, *Bradley* says, was kept from Infection, by the Number of Druggists and Apothecaries living there.

In the Plague at *Marseilles*, a few Years ago, *Bellost*, who refers the Original to a Multitude of Eggs of Worms, infecting the Saliva, Food, and Chyle; and that these Worms hatched by the Stomach, took their Passage into the Blood, at a certain Size, hindering the Circulation; affecting the nervous Juice and solid Parts. Advices for Defence or Cure, Amulets of Mercury to be worn in Bags at the Sternum and Emunctories; whereby this Admissiveness of the Pores, Effluvias were received into the Blood, specifically destructive of all verminous Insects. An illustrious Prince, continues he, wearing such an Amulet, escaped the Small Pox.

Giognini, an Italian Physician, orders two or three Drams to be worn crude; which he knew to be a Defensive, and a Cure for the Jaundice; as also a Preservative against the noxious Vapours of inclement Seasons: It breaks and conquers the different figured Seeds of pestilential Distempers floating in the Air; or else mixing with the Blood, kills them where hatched.

Other Philosophers ascribe the Power of Mercury to warn in these Cases, to an electric Faculty, given them by the warmth of our Bodies, alluring infectious Particles outwards. All Bodies say they, continually are emitting Effluvias, more or less, around them; and some whether they be inside or outside us. Bath Waters changes Silver in the Pockets of those that use them; Quicksilver the same, taken inwardly. Saffron or Cantharides carried about us, will affect the Urine. Quincy tells us, a whole Company had their Urine smell of Turpentine, only by walking in a Room newly painted; Yawning and Laughing is communicative, so is Fear and Shame. The Sight of four Things will set the Teeth an Edge;
Small

* In the late Epidemical Fever that raged amongst us, our trading News took notice from several Places, how remarkable it was, that none who smoked, were Infected.

Small Pox, Itch and Pestilence, are infectious; if so, mercurial Amulets bid fair, either for resisting Infection outwards, or conquering their Seeds when in the Body. But then, again, if none of these *Præcognita* are constant Effects, mercurial or any other Amulets, must be very precarious also. People may be soon inclined to use what appears innocent, easy to be done, or what they love, as anti-convulsive *Pæony*, Amber Necklaces, Tobacco, &c. when allowed to be beneficial by those they think ought to know; but the good from such Amulets, must be measured like other Prescriptions, by Experience, and if more are found to do well than otherways by their Use, they may like Inward Anti-pestilentials, &c. be accounted good.

Baglivi refines on this Doctrine of Effluvia's, ascribing his Cures of the Tarantula's Poison, to the peculiar undulation any Instrument or Tune makes by its Strokes in the Air; which vibrating upon the external Parts of Patients, is communicated to the whole nervous System, and produces that happy Alteration in Solids and Fluids, that contributes to the Cures. The Contraction of the Solids impresses new mathematical Motions and Directions to the Fluids; in one or both of which, is seated all Distempers, and without any other help than a continuance of Faith, will alter their Quality. A Philosophy as abstruse and wonderful as is the Nature of the Poison its to expel, but however furnishes this Observation, that if the Particles of sound can do so much, the Effluvia's of Amulets may do more.

The Moors of *Barbary*, and generally through Mahometan Dominions, People are fond of *Charms*; leaving Nature and them to work out the Cure of almost every Distemper they are subject to; and this by a stronger way of striking their Faith, the Doctrine of absolute Predestination, where every one holds his time fixed, beyond the Power of second Means to hasten or retard; an Opinion said to have been held by King *William*, but by no means fitting for Nations of Liberty and Trade; for when the one was infringed, Men would its likely be more Precipitate in their Revenge, and dislike Physick, and the Trade thereof, when persuaded by a religious Principle, no sort could stand them in any stead?

A

A long and intense Passion on one Object, whether of Pride, Love, Anger, Fear or Envy, we see have brought on some universal Tremors; on others Convulsions, Madness, Melancholy, Consumption, Hecticks, or such a Chronical Disorder, as has wasted their Strength and their Flesh, as certainly, as the taking in of any poisonous Drugs would have done. Any thing frightful, sudden and surprizing, upon soft timorous Natures, not only shews itself in the Countenance, but produces sometimes many troublesome Consequences. A Parliamentary One will make even grown Men sh—t themselves, scare them out of their Wits, turn the Hair Grey, (*Shenkius.*) Surprise removes the Hiccough; looking from Precipices, or Wheels turning swiftly, gives Giddiness, &c. Shall then these little Accidents, or the Passions, (from Caprice or Humour perhaps) produce these Effects, and not be able to do any thing by Amulets? No, as the Spirits in many Cases resort in Plenty, we find where the Fancy determines, giving Joy and Gladness to the Heart, Strength and Fleetness to the Limbs, (*Pedibus timor addidit alas.*) Lust a Flagrancy to the Eyes, Palpitation and Priapism; so Amulets under strong Imagination, is carried with more Force to a distemper'd Part, and its natural Powers under this Circumstance exert better to a Discussion.

The Cures compassed in this manner, are not more admirable than many of the Distempers themselves. Who can apprehend by what impenetrable Method the Bite of a * mad Dog or Tarantula should produce their Symptoms? The touch of a *Torpedo* Numbness? Or a Woman impress the Marks of her Longings and her Frights on a Foetus? (*V. Turner's* Section on the Force of Imagination, p. 155.) If they are allowed to do these, doubtless they may the other; and not by Miracles which *Spinoza* denies the Possibility of, but by natural and regular Causes, though inscrutable to us.

The

* *V. Turner's Collect. where you will find a Woman dyed Hydrophobical by a mad Dog biting of her Gown. A young Man raving mad by the Scratch of a Cat, four Years after,* p. 406.

The best Way therefore of using Amulets, must be in squaring them to the Imagination of Patients; let the Newness and Surprize exceed the Invention, and keep up the Humor by a long Roll of Cures and Vouchers. Many Distempers, especially of Women, *That are ill all over, or know not what they ail*, have been cured; I am apt to think more by a Fancy to the Physician than his Prescription; which hangs on the File like an Amulet. Quacks again, according to their Boldness and Way of addressing, (Velvet and Infallibility particularly,) command Success by striking the Fancies of an Audience. If a few, more sensible than the rest, see the Doctor's Miscarriages, and are not so easily gulled at first Sight, yet when they see a Man is never ashamed, in time jump in to his Assistance.





XXII. EMPIRICI.

THE present Age deeply enveloped in Trade, resort to Advertisements continually to sell their several Wares, and get the whip-hand as called of one another. There is no Trader ever so great in the City I believe, but stoops of himself, or by his Instruments, to various Artifices and lies to advance the Sale and Price of their particular Commodities. When Monopolizers are overstocked, the News Papers, to invite Buyers, are full of bad Crops abroad, Loss of Ships, Storms, Hurricanes and *Guarde da Costa's* that forbid any further, or a sparing Importation. Or if that cannot be hid, the Demand they tell you is so extraordinary at home, notwithstanding large Imports, that the Goods are advanced 12 *d.* a Gallon, or 12 *d.* the Yard or Pound. And patterning from these Gentlemen, Butchers, Farmers, and the like, can make Wind, Rain, fair or foul Weather, to affect the Price of what they sell.

Politicians again, in Stocks and Lotteries. Insurers upon Ships, have every Day some Tale or other to rise or fall their *Præmiums*. And the lowest Traders are so artful in the Penmanship of Woollen, Linnen, Caps, and Banjans to be sold, or Auctions of Goods; that People will chuse to be cheated, rather in one Street, or by one certain Auctioneer than another, every Sort almost having its Rise and Fall improveable * by Advertisement; and become better in one Paper than another. A commendable Industry amidst the Warfare and Perils of Life, but shews what I aim at. That the whole Nation are a Society of Quacks. The Divine, Physician, Politician, and Merchant belying their own when selling, and traducing others Commodities to help it. This I believe
may

* Spectator, N^o 444. — Tatler, N^o 240.

may be the Reason, every Pedlar and Trickster in Trade, are dignify'd abroad with the Title of Mercanti or Merchande; and possibly this sort of Contention about our own Divinity and Physick have given a handle to Revilers to call them Trades, and the Things they sell, *Stuff*.

The Price of Government and Company's Stocks and Securities, with the *Credit* pretended to be formed from them, are but Quackeries. The same Men may be both Buyers and Sellers by different Agents, and so rise and fall as they think fit.

In Politicks we find Squadrons, an Enemy never had, cruising to employ and shew how absolutely necessary our own real ones are, to interrupt their Designs. Inundations without Water among our Enemies; great Fires without Fuel and Plagues, without Depopulation, are some of the great Quackeries that give Honour and Countenance to the Lefs. An *Empirick* in Physick, so he manages well, and gains for his Family, deriving more Honour from these Roots of which he is only a little Branch.

If mounted on a Stage, or in a Chaise, he is as properly Mercanti or Physick-monger, as those who deal in Skins or Fish, are Felt or Fishmongers, and ought to have a proportionable Respect, especially with all such who want Physick more than they do Skins or Fish: Every one in their Way are serviceable to Society. And if by travelling in Bills and Advertisements, he gets off more of other Merchants Drugs than otherways they would do, he deserves also their Thanks and Approbation. Some had intirely decayed and spoiled in the Warehouse, without this Help. Dispensaries and Patents. On the other Hand also, Buyers will not be Angry with him, Drugs may be a little musty, and yet not decay'd; therefore if his Art conceals the Defect, carries them to every one's Door, and does not force any thing down their Throats, but leaves them to their Choice, and abates the Price; *Volenti non fit Injuria*.

The Circumferaneous of them seem to me for this Reason most valuable; many are so idle in the Country, *battening in Ease*, and slumbering Life away. Or so busy with one thing or another, that they will not go far from home to seek for Remedy, though of *Kirleus*; a Kindness therefore in whoever brings them. Quacks also to Towns they

they were born in, or have been treated well, often have the Generosity to lower the Price of their Packets, before they depart; that so the neediest may have no Occasion to be without Helps by them on any Disaster, unless through their own Perverseness. One of this Sort, at *Reading*, told his Audience. It was not the Hopes of Profit had brought him down among them, but pure Kindness for his Townsmen; to every one of whom, (really born there) he designed to make a Present of Six-pence. Now says he, 'Gentlemen, Here is an incomparable Packet of Medicines, containing something good for every Ailment you can possibly be afflicted with, the Virtues and Directions for Use more at large in the printed Paper. And as I do assure you I never in my Life, through any Towns I have stopped at, sold them for less than a Shilling. You shall, being my Friends and Townsmen, to whom I bear great good Will, have them for half Price *which is giving you Six-pence a Piece.*'

Mrs. *Stephens*, Anno Salutis, 173- offered to the World, for the small Sum of 5000*l.* only; a medicinal Composition that was a sure Dissolvent of the Stone in the Bladder. Several of our Nobility and Gentry; of Friendship or convinced some other way of its Efficacy, and affected with the Sufferings of many fellow Creatures that laboured under that Distemper, subscribed from ten to forty Guineas for the Purchase: But after fatiguing themselves with Advertisements that did not answer the Call, had Interest enough to pursue a better Method in Parliament, who after Deliberation, with equal Goodness and Wisdom, granted the above Sum, judging it improper so important a Secret should be lost to the Publick; and was paid out of the Exchequer, after a proper Examination and Certificate. With this farther help of Course, first to the Spinster, in that every Body who wanted the Medicine would most likely apply to herself, or whom she ordered to dispense it, from which Sale, by the Reputation of the Purchase and Purchasers, might be expected considerable additional Profits. And secondly, to her Friends the Subscribers, who by this I suppose, were released from their Subscriptions, had the Credit of doing a generous thing towards a deserving Woman. And what

was

was more, promoted a general Good. *Populus amat mirifice & nobilissime decipiendum.*

Some of the Faculty appointed to examine and sign a Certificate, argued in their own, and the Medicines Defence. That as Gums are dissolved in Water, Anchovies in Oil or Butter, Salt in Vinegar, &c. so may the Stone in the Bladder be with taking this Preparation, forgetting to explain the Cream of the Conceit, after what manner its to get there in full Power? Or why so great a Dissolver, does not act where it should not do in the Passage. A Quality therefore much doubted by Uncertificators who would venture to lay odds, a Stone out of the Bladder covered *Stephani Prescriptione*, and stewed in *balneo Mariæ* a Month, would not dissolve.

The Fame of her Success however undeserving, soon instigated *Sarah Gaylard*, to offer a better and a cheaper Medicine for the same Use; humbly hoping, in her Advertisements, she might procure the Favour of honourable and disinterested Trustees for a fair Trial, she being Niece and Heir to *Dr. Robinson*, and therefore better qualified to prepare a Dissolvent than her Sister *Stephens*, whom she spitefully insinuates to have stolen a stale nauseous Receipt, fitter for Horses than humane Creatures. Her own she vouches had kept the late Lord Chief Justice *Raymond* alive several Years, and who died at last for want of knowing where to apply for it.

There were several other Imitators, and one of them a Gentlewoman too, at the *Crown* in *Coleman-street*, who proffered infallible Specifick Tinctures, Chymical Liquors, and Electuaries; that swept not only the Bladder, but the Kidneys and Ureters cleaner than any thing hitherto known, and very cheap, but could not be accepted to regular Examination, because a second might beget a third, and so on, implying a Reproach on the first; and what was worse Jobbs would this way be of no Worth to Proprietors. Otherways I should think *Sarah's*, or indeed any Gentlewoman's Receipt, should have a Chance for equal Approbation, since the Trustees must know some kind of Stones, submit better to one Woman's Dissolvent than another. Besides, *Mrs. Stephens's* Soap and Snails, seems sinking into an Archive. Not one wonderful Operation having been produced to the Publick, as I remember, since the Money was paid.

Mrs.

Mrs. *Mapp*, a Virago from *Epsom*, with only Country Diet and Instruction; its said, commenced a Doctress about this Time, practiced in the *Diorthosis* and was quickly celebrated through every Street and Alley, for the Cure of all sorts of distorted Joints and Bones, she could make according to the cheating Voice of Fame, the Crooked Strait, tho' that Crookedness had been from the Birth; Ancles, Knees and Elbows distorted, and twisted round almost, or broken Backs she could recover to their Site and Figure, adding Soundness and Strength, without which the other had been nothing. Persons of Distinction, and *Independent Voters*, all pushed in for a Share of founding the Praises of such a Prodigy-monger, at every Corner; and countenanced to their Power, what they believed tended even in a private Way, so much to the Relief of humane Calamities, and the publick Good. Cripples from the Cradle now threw by their Crutches, — till they wanted them again. And many run that before could only creep along half bent. People were so fond of Novelty and Wonder from a Woman of their own Size in Understanding, that if a Man only heard (and Wonders were to be heard of every Day) such or such a lame Person made well in *Chick-lane*, all that heard him attested the same, and added half a Dozen more cured in *New-Bedlam*. Customers by this Means popped in a-pace from all Parts, and she had her appointed Days in Town to bestow her Blessings on those that asked: To the Poor for nothing, unless a Fee to *Zany*, who could introduce according to the Dimensions of the Silver, before their Turns, and which Beggars are ambitious of. Her Method was pulling, stretching violently, (or stamping sometimes) upon the Distortions, to rectify as well as Strength could do the Positions; then bracing on a tort Rowler, which she had learned to handle very neatly, left them to a three Weeks or Month's Confinement.

This sometimes in old Sprains and splawed Joints, might and did answer; more so when a Patient happened to be young, and the Lameness recent, just as breaking a fractured Bone ill set, removes a preceding Deformity and Imbecility. And if the Patients became worse, or no better when the Bandage loosened (a frequent Case) there was no Reputation lost, because an ignorant, swearing, drunken

drunken Creature, who in excuse also, by many bold Attempts had done some Good.

And one escaped is always found

To hollow more than ten that's drown'd.

Thus was Mrs. *Mapp* exercised between *London* and *Epsom*, and got Money, with hopes for some time of being made Bone-setter General to the Army *durante Pace*. But Practice falling off too soon, she less successful perhaps, or had cured all the Cripples, and humbling herself too much in marrying a Footman, at last died, so reduced, as to be buried, I have heard, at the Parish Charge, an Instance of the Instability of Fortune, and may teach Successors not to presume too much; Skill being often slighted, and Fame like Fortune uncertain.

Transmutat incertos honores

Nunc mihi, nunc alii benigna.

If it should be asked how properly Mrs. *Mapp*, Mrs. *Stephens*, or the following Articles are brought into a Piece of Surgery; I reply (while I think of it) That I was afraid, *First*, that so memorable Subjects might be too soon forgot, and that therefore short Memorials to next Generation, should the *Navy Surgeon* live so long, might give a tolerable Idea of the Physical Understanding of the present. *Secondly*, To mix Amusement with Instruction: Facts may be related without any formal Attack, which only helps to raise the Credit of Antagonists, something like an Orthodox Divine, publicly engaging and controverting an Atheist or an Infidel. The best Reasons in the World, without the Interposition of the Magistrate, are not only worth nothing, but worse than nothing; because they help, I say, to raise the Reputation of Enemies. And the worst Reasons when he backs it will do. *Thirdly*, To prevent honest-minded Men pursuing their Study in Physick (or indeed any Science) with too great and too careful Application, the getting Money or Preferment no way depending on it. Every Man that understands a Whistle, and can vote well, being without Pains his Superior.

Dr. *T——r*, Oculist General of the Times, succeeded Sir *William Read*, and Dr. *Grant*. Sir *William* was Knighted by her Majesty Queen *Anne*, some say, (indeed ironically) through a bad Sight; and of the other, the *Spectator*, who every body thought saw well, affirms,

U

No.

N^o. 472. "His happy Hand had brought and restored to
 "Sight several hundred, in less than four Years: Many
 "having received Sight by his Means, *who came blind*
 "*from their Mothers Womb.* I my self, says he, (then
 "growing old) have been cured of a Weakness in my
 "Eyes next to Blindness, and am ready to believe any
 "thing reported of his Ability. A great Comfort to
 "those in Distress, since they may conceive Hopes
 "of being no longer miserable in this kind, while such
 "Artists live."

T—r begun in the World, I am told, with advertising from a Garret his wonderful Success in the Cure of Blindness, and Distempers of the Eyes at Home and Abroad; long before he had Patients, or any one knew where he lived, a Preparatory for his Reception, that it might be at once with the Honour due.

His Practice lay principally in *Tapping, and in Brushing the Eyes.* The former an Operation with the Needle, ran from the outward *Canthus*, through the *Tunica conjunctiva* such a Depth, as to come before the *Cornea*, and let out the aqueous Humour; presuming, I guess, that the Dimness or want of Sight, proceeded from a cloudiness of that Humour which in a new Recruit would become more transparent.

There are several old Authors, who tell us, this Humour may be drawn off, or expended by a Wound, so as to bring the *Cornea* flaccid and opaque; and yet recover Sight again in a Restoration of the Humour. *Derham* in his *Physico Theology*, affirms it experimented so in a Goose by *Dr. Daniel*, 1670. yet being so is no Argument that it mends the Sight; and by what I have heard from a Patient or two who had gone through the Operation, I am inclined to believe it rarely helps, rather makes a dim Sight worse, the *Ichor* from that internal Wound made by the Needle though never so inconsiderable, leaving by a Mixture with the Humour a greater Opacity.

However our Oculist invited publicly the Skilled and Unskilled, to come and behold him in his Office, where the embroidered Night-Gown, Flaxen-Wig, a dextrous White Hand, and Ruffled for the Operation, silenced Censure from the well-bred, who are upon such Appearances, rather inclined to wish the dim-sighted, and such

such as would have their Eyes poked, or a new Pupil made, should have it done by Mr. T——r's Hand sooner than any other ; it had no Fault that ever I could hear, but only that it did no Good, all the Hazard run was of not being worse afterwards. Then Patients so rejoiced, and had so much Occasion, they added to his Reputation, by imputing any Unsuccessfulness to some Fault of their own, and Impossibility of Cure any where else.

When the formal and manual Part convince ; a Doctor may travel a long Way from *East* to *West* with Reputation : T——r did so, making a great Noise in his Travels, great Dispatch, and great Collections. His Talent was to make the Deaf hear as well as the Blind to see, when once he had resolved, and sold his Otagick Drops and Collyriums extravagantly dear in the Country ; a Guinea for every Thumb-Vial, and as a necessary Dispatch made him leave his Cures for the most part incomplete ; Patients were obliged to follow his Advice, and buy two or three more to finish what he had so ably begun. He was too cunning to wait the issue, the Benefit of Mankind he told the Purblind obliged him to go on doing good ; but however, he would leave as many Thumb-Vials amongst them as he could, to perpetuate his Memory, and carry it to the next Towns ; who waited and prepared for him on those Sounds, in the same manner People do for Confirmation : But most People think, notwithstanding his Diligence, they are generally worse sighted than ever.

The Doctor's other Method of brushing the Eyes, though light and airy, had commonly a worse Consequence. If the Sight was not brushed out, it was sure never to be brushed in ; but here for want of Patients advertising their Cases, to compare with his, we that could see are very much in the Dark, and always must be so in relation to Travellers and *Empiricism*.

J——W—d, *Pilulæ minimæ & guttulæ Possessor*, deserves greatest Regard, having followed Practice many Years. Had the most Patients, done the most Charity with the Gifts, and yet got the most Money, selling his Pill and Drop for a Guinea, unless to the Poor, who receiving *gratis*, were obliged by their Constitution to sound its Preciousness, and endeavour to get him Custom, with those that could purchase. Those that could again, not to

be behind hand in a Charity undertaken by a private Man, bought often when they had little or no Occasion, and for Servants it may be, that were not worth the laying a Guinea out upon; by this friendly Aid, soon putting him in a Chariot and Equipage.

They were judged and with a great deal of Probability to be Antimonial Preparations, from the smallness of the Dose and violent Operation; which with some Distempers and in robust Constitutions, will beyond any other Class answer the End, just as Mrs. Mapp's external Roughness would re-instate a defective Bone or Joint, only oftner as the internal Parts are more susceptible, and Nature works better if not too much oppressed.

Some Chymists, who analyzed the Pill, affirmed it to be *Butter of* * *Antimony*, digested in three times the Quantity of *Alcohol*, and offered it the Town at two Pence a Pill, *invidus alterius macrescit rebus opimis*, for who below a Beadle in a Parish could think a two-penny Pill of any Vertue, besides *Joshua's* had got the start, and to supplant would require equal Experiments and Vouchers.

Wherever he got the Secret, I am apt to believe his Success in old Pains and Aches, in Scurveys, Rheumatisms, obstructed *Menstruæ*, and some other stubborn Diseases, where Antimonial and Mercurial Preparations are the Catholicons of Physick.

Lord Chief Justice *Reynolds*, made an Appearance in the publick Prints in Defence of Truth: Certifying November 1734, "That his Maid, 26 Years of Age, weakened with a Cold and Fever, had lost all Muscular Motion,"

* *This Butter of Antimony was the Secret of Mr. Boyce, and communicated to L. Quesne, who both wrought admirable Cures.*

Basil Valentine writ a Piece called *Currus Triumphalis Antimonii*, A. D. 1400. of so excellent Use, that he imagin'd it would conquer any Distemper, that was conquerable.

Van Helmont of Brussels, 1577. performed such Cures with it, that were thought above the Power of any natural Bodies to perform, and occasioned his being put into the Inquisition.

Other Alchymists have asserted, that where the *Boxels* are found, and can bear violent Shocks, there is no better Medicine in Being.

“ tion, her upper Lip and Eye-lids only moveable by
 “ others ; the lower Limbs quite useleſs, and emaciating—
 “ was ſome Weeks under regular Phyſick without Bene-
 “ fit, until taking three or four of *Joſhua Wards* Pills
 “ and Drops, (one at a time in proper Intervals) the
 “ former operating ſtrongly both by Vomit and Stool ;
 “ her *Menſes*, my Lord ſays, returned that were ſtopped,
 “ and ſhe gradually recovered the Uſe of all her Muſcles,
 “ ſo as to be able to walk in a Month.”

The Maſter of the Rolls to bear the Chief Juſtice Company, attested a like ſort of Cure within his Knowledge. But above all, to compleat his Fame, on ſuch a Sunday he had the Honour to preſent her late Ma- jeſty Queen *Caroline*, with fix Patients cured of Agues, Cholicks, and Rheumatifms, who diſmiſſed them as he had done, whole again ; with Tokens of her Royal Be- nificence.

What I obſerve to be an Oversight in *Joſhua's* Adver- tiſements, was the Number of Patients preſented, and not mentioning the Cures to be done by the Pill ; for this would ſuggeſt to an Enemy, that they might as well have recovered by letting his or any Body's Pills alone ; nor is there any Apothecary of Buſineſs through both Cities, but could have matched his Number every Week, and double for Sundays. The Dignity therefore of ſuch Preſentations deſigned in *commendam*, rather raiſed Doubts ; and when Mr. *W—d* ſeemed obliged as it were, to give a Liſt in the News of about a Dozen extraordinary Caſes, that had ſucceeded in his Hands, the Perſons Names, their Places of Abode and Diſtempers. Criti- cal and inquiſitive Men went ſeeking after them, and pretended to have detected notorious * Untruths in his Relation, from the Mouths of thoſe very Patients. Af- firming he was a Man that knew not how to vary the Doſes on different Conſtitutions, or diſtinguiſh Diſtem- pers, conſequently the Pil under his Hands had been Miſchievous, *figulus figulo invidet*. A falſe Way to attack becauſe unceremonious to the Vouchers, and was a fling- ing a Stone at themſelves ; every Man in Practice being

U 3

able

* Grub-ſtreet Journals, and a Pamphlet or two publiſhed at this time.

able at some Interval to produce six or twelve Patients recovered, in spite of his Teeth; therefore rather modest in Mr. *W—d*, who considering his Practice might as well have made a *hundred List*.

Others were envious enough to say, Poor People were hired at Chair-Womens Wages, to place themselves in the Avenues of his Office; others mingled with the Company inside the House, to give curious Gapers an Account of the Blessings might be expected from the Doctor's Hands: When I went first to this *Shew* in *Pall-mall*, I met two or three of these indigent aged People inside,

Among the numerous Shoals,

Of such as paid to be reputed Fools.

One that he had been Blind for twenty Years; another Deaf as long, recovered by *Joshua's* Skill and God's Blessing; a young Woman in particular, still his Patient at the Bar, was born Deaf and Dumb, (they told you) restored so well under his Care, that I my self heard her articulately pronounce Hat, Hand, Cane, or any other thing placed before her to gratify and convince the Audience; who all imagined, I believe, there could be no Cheat in so fair an Appeal.

The next Wonder to seeing the Deaf, Dumb, and Blind, hear, speak, and see; was seeing it done by such simple Means, a Pil, a Drop, and two Bottles of liquid Snuff, one stronger than the other, to provoke Sneezing and purge the Head. This last he conveyed up the Nostrils with a Tea-spoon, till he had told all their Noses, and then they went home thoroughly satisfied, if they had ten Miles to walk. A Method well devised, to serve so large a Company any thing orderly, and which otherwise would have been as impossible for him to have done as to have fed them: There was a Charm also in taking this Snuff twice a Week *only*.

At his other Office in *Threadneedle-street*, an Epitome of the *Royal Exchange* for Throng; they tell you also, that you may find Patients, or the Friends of Patients, leaning upon Posts attentive, who for a Half-penny or perhaps mere good Will, chaunt the History of some admirable Cure done by that good Man over the way, (God bless him) dear *Joshua*; on themselves, their Cousins, or Grandmothers, with the Names of the Streets where they lived, and might be heard of.

His

His Hospital again, a Seminary of Cripples erected at the old Place of *Pimblico*, with this Motto (*ignarus malorum*)—*miseris succurrere disco*. You find the few Invalids contained, to have been such who had been lame from their Cradles, forced to beg with Crutches, Bedrid or Paralytick for Years, now grown well and fit to take up their Beds and walk.

Elizabeth Cater's Enmity went still farther, she advertized from *Castle-Court, Birchin-lane*, just under his Nose; That she took off Films in five Minutes Time, by gentler and properer Medicines than liquid Snuff, which according to her you might to as good purpose wash your Elbows; but her Medicine does it easy and soon. — *Daniel Jeffries* in *Burr-street*, thus vouches, *I was blind two Years with large Films over my Sight, and by the Blessing of God, was cured by Eliz. Cater, Witness my Hand. D. J.*

Quis est inimicissimum Doctori? Alter Doctor.

To this short Account of two Pair the thrivingest *Medico-mongers* in our times, I shall add an Observation or two.

Common People follow Cheats in Physick, on much the same Motive they do in Divinity, *The Good that is promised*; and though they feel nothing of it, yet when countenanced by their Betters, 'tis difficult persuading them otherways, especially when Assent obliges, or can procure them any Civilities in hard Times.

A Jugler with a good Front and a good Address, may (says Mr. *Hobbs*) impose singly; but in Confederacy any Imposture may force Belief among the ignorant. If two conspire, the one Blind, and the other to cure him, with many Standers by to bear Witness, they will deceive and spread the Deceit, the surer and better by Men in Scarlet and fine Linnen; or conducted by Age, Gravity, and Experience. The Multitude have a strong Bias to Shew and Novelty, are easily led into any Belief that fixes their Hopes or removes their Fears; and had Physick or Divinity Ten times the Uncertainty, there would not be an Unbeliever, (by their own Consent) to some Quack or other.

When those that seek have received the good News themselves, and without any Cost; there is Gratitude, and an incurable Itch of divulging and magnifying.

Why Men of Distinction and better Sense are found mixed with these, I guess to be either from too inadvertent an Assertion of false Facts and Cures, that may make Retraction a little shameful; Personal Knowledge of the Doctor; some Share in the Packets; to cast a slur upon the Faculty, (like as *Whitfield* disparages Dignitaries and Orthodoxy) or when the Ears and Eyes of the Multitude are filled, to jump in and help on particular Subscriptions: I believe Mr. *W—d*'s Hospital was the Introduction to Infirmarys, well-disposed Christians seeing so much done by his single Endeavours, came in to support a like salutary Provision, up and down the Kingdom, beginning first at the Head; or *lastly*, they may be brought in by false Philosophy or Superstition.

Quære, Whether too much of the wondrous in the Cures, done on many, in the Streets and before Multitudes, does not give help to the spreading of Atheism? Traducing Scripture-Miracles, which seem to vulgar Eyes no greater in the Paralytic, Blind, &c. then what may be seen in *Thread-needle-street*, *Pimlico's*, and *Pall-Mall's*.

Or whether some of another Cast may not be prompted to think such inadæquate Means a dangerous Imitation of * Popery? and impolitick to trust with any private Man, who may call when he thinks fit his liquid Snuff Holy Water; and his other Medicines may be consecrated like the *Agnus Dei*. There was a dangerous Woman our History tells us, of this Name in King *James* the First's Time, who by the Pope's Indulgence, put on the Ignatian Habit, and became Mother-General to Two Hundred of her Sex in *England*.

Lastly, I would observe in Favour of Quackery, That as all Physick has a near Affinity with it, (the nearest
Phy-

* *Praying to the Images of Saints*—Anthony cures Inflammations. Roch, the Plague. Petronilla, Agues. Lucia, sore Eyes. Otilia, Deafness. St. Job, Patronum esse eorum quæ luc venerea laborant.

Physicians being always and at all Places the best,) whether every *Nostrum* Keeper might not be suffered with a Price fixed as Markets for Bread, to travel with Advantage to the Publick? People might then be better help'd to the remotest Parts of the Kingdom, and the better, if their Skill was confined to one Distemper for acquiring the greater Knowledge; and they should as its said is the Custom in *France*, administer to the Poor three Days *gratis*, in every Town they come to.

Country Villages would now and then be amused as well as great Towns; would have a free and open Air to swallow their Medicines in, (a great Advantage) and not in the confined nauseous Smells of Hospitals they are entirely unused to. They would have a nigher, and therefore a better Help from Neighbours; and in short, every way better provided for their Recovery than by the involuntary Contributions of a Parish, who make themselves sick by restoring the Healths of others.





XXIII. XENODOCHIA.]

Could Infirmaries have a Foundation like our publick Hospitals, *St. Thomas's, Bartholomew's, &c.* or by the Contribution only of Nobility, Gentry, or such as have pillaged the Publick, they would merit Abundance more Approbation, would shine far beyond indignant free Gifts to Foreign Queen's;* but temporary Subscriptions designed a Parish Charge at every Place they are created; even to the Widow's Mite, as the Reverend *Dr. Clark* gives us Hopes; they seem a cunning Encroachment both on Liberty and Property. It has been from our Poor being so abominably plundered, that has made Infirmaries, and many of them necessary; which by this way of taxing on ordinary People, drove to great Streights already by decay of Business, heavy Taxes, and Dearth of Provision, are still to be made worse, and is putting them in a way of increasing the Number of the Necessitous; for as in Trade Money begets Money, so verily in Trade, also Beggars beget Beggars; not only in the common way of Generation, but they are artificially made to get them by their own Labour and Industry. The Works Beggars are employed in from charitable Contributions, continually reducing more, and multiplying every Parish Charge.

This kind of Charity pleading more powerfully with the lower Classes, who have all had a Taste of the Infirmities and Wants of Humane Nature among us, and more persuasively the nearer they are wanting such a Relief themselves aggravates the Evil, because the Good-natur'd

* Agitators were now contriving a generous Free Gift (called) for the Queen of Hungary, who was opposing the new elected Emperor.

natur'd, Innocent, Superstitious, those least able, will be provok'd to give beyond Discretion or Ability; we may see this in any Parish Collections, where the Parson is made one of the Beggars. Neither can a Contribution in any indeed, be properly voluntary, when influenced by rich and powerful Trustees. Every prudent Man, let his Regard to his Wife and Family be never so affectionate, and wanting all his Care to maintain, must look to the Inconveniencies, a denial in this Case may subject him to, as a Tradesman or a Parishioner; and who is expected perhaps, to give discretionally, or according to the Rents as best suits their Purpose who ask. 'Tis so in other Collections, Loss by Fires, at home or abroad, relieving distressed Protestants in *Poland*, &c. complied with from Door to Door, according to the Fronts of those that collect. The chief in a Town or Parish can hurt Inferiors more than the Portion they ask amounts to, consequently imprudent to trust their Christianity with a Refusal. They ask its true, with more Decency than Mobs for Bonfires and Rejoycing; but their Faces wear the same Threats of breaking your Head or your Windows, the first fly Opportunity; especially if there is tacked on these Occasions any cross Animadversions with the Denial. But supposing our Betters would not use their full Credit in charitable Demands, only leave the *Parson* to fix on every One's Heart, *Whoever giveth to the Poor, lendeth to the Lord*; yet this is mischievous; What do we see even a *Whitfield* make for his Orphan-House in *Georgia*? poor deluded People are cheated out of their Time and their Money, hurrying through thick and thin, to lay up Treasure by his Hands in Heaven. Women, Children and Servants being taught by this Means to rob their Husbands, Parents and Masters, in order to make a Purchase to the great Reproach of that Grace and Spirit its done by; picking the Pocket of Beggars being a far worse Crime than that of a Gentleman's. That Infirmaries are spreading, coming to Towns of greatest Trade first, and designed a publick Charge, points out like those emphatical Badges of Liberty the Workhouses, the Cunning and Benefit of Traffickers and Traffick. These are not sufficient (only one in a Parish,) say they, nor so convenient on many Occasions; wherefore Infirmaries shall be Appendixes to them, and take in the Superfluity of Sick,

INFIRMARIES.

Sick, Poor, and Stranger, that can hardly, or very badly be provided for in Workhouses, the Objects increasing, through want of Food and Conveniencies.

Conjointly, and with the pious Improvements they are capable of, will result these further Advantages. *First*, the Merchants gets rid with a better Grace of clamorous Beggars surrounding him, or sends them if *Sturdy*, to the House of Correction. *Second*, His Work will be done in part at the Publick Charge, and lessening this Price for Labour may make Markets better abroad. *Thirdly*, He may for the same Purpose import more Foreigners, and Irish-men, who living harder, and under the Advantage of Relief (when disabled) from an Infirmary or Workhouse, may abate of Wages to their Tenants the Farmers, as if they had Small Beer and Bread allowed them; which consequently will make their Rents easier to get in. *Fourthly*, They are a generous Provision for worn out Journeymen and their poor Families; also Gentlemens decayed superannuated Servants have here a Retreat; every Parish knowing to their Cost, that twelve Month's Service transfers the Care to them; or the Management falling of course into principal Contributors Hands, (little Subscribers having nothing more to do in them than paying their Money,) old Servants may have the Preference in what Preference there can be at Infirmarys and Workhouses. *Fifthly*, As an Infirmary is to be the cleanest part of a Workhouse, attended with Physicians, Nurses, a better Lodging and Diet; I am under Apprehension, they will entice the sober and better sort of reduced Tradesmen and Artizans, when out of Work, to take up with an Imprisonment and Provision they stood offended at before, from a pernicious jumble of Sexes; Old and Young, Rogue and Whore, Vagabond and Housekeeper, well or sick, clean or lousy, in the same common dirty Apartments, foully fed and neglected; from whence it may happen that the Duty Undertakers may put such abler Artists to, reducing their Brethren without, may bring in such a Number of Carpenters, Joyners, Smiths, Bricklayers, Weavers, Harvest People, Spinners, and Winders of Silk, &c. as that Gentlemen may have their Business done with far less Trouble and Expence; and so in Time humane

INFIRMARIES.

301

humane Creatures appropriated like Beasts to the Soil as in *Poland*, or be among the Privileges * of a Charter.

There seems something like this already; the Work done here, or in Charity Schools, not advantaging their own Condition above the settled Allowance, and in the Girls is for the Benefit of Mistresses, who for this Reason affording their Work cheap, ruin others.

The *London Infirmary* erected in *Goodman's-Fields*, thus advertise, "No Christian can be of so Savage Nature, as to pass regardless by those Number of miserable Objects, who daily present themselves to us, and whose various Diseases, were all other Motives silent, would be as so many Tongues, which at once speak their own Anguish, and excite our Pity; wherefore, Noblemen, Gentlemen, and Merchants, induced by a benevolent and publick Spirit, have taken a large House that holds 40 Beds, and invited a Subscription to relieve a few of those thousand Sailors in the Merchants Service that want; their Wives and Children, and poor British Manufacturers, their Wives and Children, when in Distress by Sickness or Casualties; no desirable publick Provision having yet been made, or particularly instituted for their Relief. 1400 Objects in two Years, have been reinstated from hence, to a capacity of working; the Publick again enjoying the Benefit of their Labour, and they and their Families prevented from being a constant Incumbrance to the Communities. *Small Sums will be thankfully received and acknowledged.*

"The *Hotel Dieu* at *Paris*, contains more Patients at one Time, than all our Hospitals and Infirmaryes in and about *London* together."

Whence we may observe, that a less City, and of less Trade, (consequently less want) are more largely provided than us; something strange, since most of their Monasteries are in Effect but Hospitals; unless a more honourable Foundation.

Secondly, By this *London Infirmary*, we see how unequal the Provision is to the Demand; Forty Beds, when

* Exeter, Hereford, Shaftsbury, Colchester, and London Workhouses, were incorporated 1698. The Quakers at Clerkenwell 1692, &c.

INFIRMARIES.

when Thousands are wanted ; and shews *London Christians may be so Savage, as to pass regardless by a Number of miserable Objects.*

Thirdly, A Call for small Sums, is an Indication ; all Hands are expected to come in to the Support ; though every Rank of Tradesmen, by this, and other Hardships of Livelihood, are descending to the same State of Beggary ; a melancholy View, and points out the ill Consequences of Foreign extensive Trade. There were no Beggars (though not one twentieth part of the Call for *Sailors, and poor British Manufacturers,*) before the 43^d of *Queen Elizabeth* ; and they have been necessarily increasing ever since ; for as Trade or Merchandize is an Art or Trick to shuffle into the Pockets of a few, the Labours and Property of the many. The Mischief must be progressive, and the Riches of the Rich, consequently are the Poverty of the Poor. Their Generosity who get, is infinitely short of the Wants created ; no Pinch-gut Money being ever paid in the Merchants Service ; and so the Cries must every where grow louder. Our printed Calculation, make 40000 in the two Cities, maintained on charitable Foundations ; besides Schools, Collections at Feasts, and Clubs ; the greatest Part of which, have arisen within this 50 Years past ; and now Thousands more are earnest, and struggling to make good their Claims to some sort or other of them.

This to me, is an unanswerable Reason, why the Charge of Infirmaryes and the Poor, should rest almost wholly on Men of Estate and Riches ; especially Merchants, who render the Times hard. A present decay of Trade may take the blame, and with some Truth, while all have been made to depend on it ; but in Reality, signifies the Fault of an *exorbitant Increase*, without which, the People could never have been so much hurt. In *Sweden* its said, one third of the Effects of Merchants, Strangers, at their Deaths goes to the Towns they traded in, and got their Wealth ; neither is it unjust, a Tythe at least, should go from Natives ; all Estates, real and personal, being raised from the Labours of the Poor ; but since we are not so happy, and the Act of *Mortmain* has restrain'd the good Disposition of departing Sinners, and made an entire Resumption of Repentance and Restitution ; there is the greater Obligation of doing it in their

Life-

Life-times, towards Infirmaries, and without making a Call on any who are obliged to stand with their Hats off: This would not only declare them a little worthy the Plenty they have collected, but be acting in Character. *The Children of this World, are wiser in their Generation, than the Children of Light*; for by bountifully contributing, they have a chance to get their Work done; I say, on easier Terms, improve their Command, and keep up Rents.

Beating down the Price of Labour, making Necessaries above that Price to purchase, and importing Strangers, seem the most effectual Means for those Ends. Artificers will underwork, having no Choice but that or starving; Husbandmen will trot from County to County, in Harvest Times for Work; but then as these Struggles for our Interest, say they, will expose them to greater Hardships: It is convenient Infirmaries should be multiplied in Town and Country. A Stranger that falls Sick or Lame in his Travels, and whose Poverty makes him helpless, wants this Support; and is I suppose, what Dr. Clark means, when he says, *All Charities hitherto, have been irregular and insufficient.*

The Rich from their Pride and Luxury, separate from all other Considerations, help on the Beggary of the Populace, by their Waste and being numerous: Just in the same manner, a private Man might be impoverished, by endeavouring to keep a large and increasing Family in equal Finery and Town Diversions, with a smaller; wherefore they alone ought to maintain such Edifices, * and not by Subscription neither, but Settlements; every Man else is only helping on Encumbrances to himself and Family, instead of relieving the Poor.

Thus abroad in our Plantations, every Planter keeps a Doctor and Medicines, for relieving sick and hurt Negroes; which they find as well as their Cattle, to be useful; and if Plantations are small, and in a Neighbourhood, one Surgeon may supply several; here is a publick Good to the Country, in preserving the Lives of many poor distressed humane Creatures; and yet the Owners in such Humanity and Service to God, are serving their own Ends; throwing off the Drudgery from themselves, and

* None disabled by Age or Infirmary, ought to depend on private Charity for a Subsistence, but that of Community, (Hobbs, p. 181)

INFIRMARIES.

and seeking at the same Time after the Kingdom of God. *Thus Godliness may be Gain, and Gain Godliness.*

To have Charities to resort too, where the Poor and miserable are Legions, is doubtless a good Thing; yet every reasonable Man must think, if the Call had not been so great, it had been much better; especially subsisting by private Contributions. There is Insult and Scandal in such Perfunctory Supports, Commons being often very coarse, and Diet like our *Guiney* Slaves, or cut short, and inclining all Sorts to Infidelity, and despising the Religion that can produce no better Works.

A Moorish Prince at the Court of *Spain*, being nigh converted to Christianity, happened to see some tattered Creatures going along, and asking what they were? was answered poor Christians, depending for their Bread on the good Dispositions and Oblations of others; to which he readily answered, He was resolved never to be of that Religion, nor serve any Master who kept his Disciples so beggarly, or so unequally as to Meat and Drink; and with great Reason, if he knew that this Master ordered all Things in common. *That if a Man would take your Coat, let him have your Cloak also. Whoever shall compel thee to go a Mile, go with him twain. Give to him that asketh; and in short, fixed the Salvation of his Followers, upon Feeding the Hungry, Cloathing the Naked, Visiting the Sick and in Prison.* (Matt. xxv.)

Malherbe a French Poet, replied after a like manner to the Poor, who said they should always pray for him. *That he believed they had no great Interest in Heaven, because left in so bad a Condition.* It's certainly unworthy our Calling, or what is worse, our Calling itself is unworthy: The worst Man in a Society, having to be sure a juster Title to bare Subsistence and Conveniency, than the best private Man can have to his Estate.

My Son says the Wise Man, lead not a Beggar's Life; it is better to die than beg; and had he lived in our Times, would probably have added, *rather venture Hanging, than subsist on a Parish Pension, or in a Workhouse*; confined to strait Room, Dirt, and Nastiness, occasionally Infirmaries, bad Company, and probably great Bawdy-Houses. *St. Martin's Workhouse*, has lately advertised Buggary; Crimes that helped on the Suppression of Religious

Religious Houses formerly. Arguing for the Piety of a People from their Number, is like magnifying Justice from a Multitude of Laws, Private and Publick Prisons; Conveniencies that bespeak rather a Correction of Principle, than any farther Extention; lest the Extravagancy of our good Dispositions, should in time convert us to a Nation of Bridewells, Workhouses, and Hospitals, of no great Reputation: The General Want and Face of Poverty in the Case, speaking more the Badness of Government, than the Relief does Goodness; or to tell People they are happy in such Benefactions, is telling them their Happiness lays in being Poor; and that they should be easier, because it may better tend to the good of haughty Benefactors.

*Whom they hate and love them too,
Strange Paradox, and yet in Truth 'tis so;
They hate them for the Wants they spread,
Then love them for their Bits of Bread.*

The two first Infirmaries, were those of *St. James's Westminster*, and *Hyde-Park Corner*. The latter most capacious instituted *October 19th, 1733*, with this Inscription on the Front,
*St. George's Hospital for Sick and Lame, supported by the
Voluntary Subscription of several of the Nobility,
Gentry, and Others.*

The Prince of *Wales* was their first President, Lord Chancellor *Talbot*, Lord *Oxford*, and Bishop *Hoadley*, their first Vice-Presidents: Men of this high Station and Dignity, brought on a surprizing Success; which bare Piety without Practice, would have been too long a struggling to attain; and the Example was quickly pattern'd in several Places, *Winchester, Gloucester, Bristol, Northampton, &c.* where they are a Town Charge, and Adjuncts to the Workhouses.

Six Physicians, two Serjeant-Surgeons, five others, and five Apothecaries, are engaged to attend the Business of *Hyde-Park Corner House*, on their several Branches in a Rotation Gratis.

Several worthy Clergymen also, not to be backward in a like Food for the Poor Souls received into it; constantly

I N F I R M A R I E S.

visit and instruct the Patients in the Doctrines and Practice of Christianity, daily Prayers are said ; a Sermon every *Sunday* ; Monthly Communion ; and at Discharge good Books given them all, *Gratis*. A great Recommendation to both Sciences ; and may possibly every where give some help to Subscriptions.

They have Medicines bought in at the best hand, inspected by the Physicians, Surgeons and Apothecaries, without any viewing Charge, as at the Hall, which must make a Plenty, and be a Blessing to those that love them.

Winchester's Infirmary, instituted 1738, Dr. *Clark*, (who highly approved and assisted the Design) gives us the particular Rules of that Establishment, with some of which and an Animadversion or two, to confirm the foregoing Remarks, I shall close the Subject.

“ Private Charities, says this Gentleman, were wasted
 “ or *ineffectual* by various sorts of ill Management, so that
 “ Men inclined to encourage *industrious Poor*, had no
 “ way, when they were under unavoidable Distresses,
 “ Sickness and Accidents.

“ In Workhouses they have Medicines dispensed with-
 “ out the *Advice of a Physician*, and only for the Poor of
 “ *particular Districts*, very inconsiderable in comparison
 “ of what is here intended : To provide for the Relief
 “ and Comfort of *Multitudes*, who do not come so regu-
 “ larly under the Care of a *Parish or Workhouse*. No en-
 “ quiry should be made *here*, how they are come in their
 “ present Extremities, but how soonest to relieve them
 “ out. Ten times as many Objects are supplied by this
 “ as the common Ways.

“ Poverty is no Interruption to the Pleasure and Com-
 “ forts of Life, *while they are in a Condition of providing*
 “ *for themselves*. If therefore the Poor had a present
 “ Support in Sickness, it would be more effectual to the
 “ Prevention of Evils, than giving them Money : Trusting
 “ what they do not understand *the Use of to their own or*
 “ *Friends ignorant Management*. Should half the Money
 “ be *perverted*, it would still do more Good than any
 “ other way of Relief. And is good Husbandry in
 “ Contributors, both to *Themselves and the Publick* ; as
 “ it is encouraging and assisting *industrious Poor*.

“ The Benefits of Hospitals in Town had been tho-
 “ roughly weighed : And this of *Winchester*, projected
 “ from

“ from thence with such Alteration only, as might make
 “ it more *useful in the Country.* And as it is found Prac-
 “ ticable, may be of infinite Use to the whole King-
 “ dom.

“ The Proposal had every Effect could be wished ; se-
 “ veral Persons of the *most Consequence and some of every*
 “ *Denomination*, entered into a common Engagement to
 “ promote it with all their Influence and Credit. King
 “ George II. gave 300 l.

“ This Hospital is under the Management of a select
 “ Number of the greatest Contributors, furnished with good
 “ Books, and laid under proper Restrictions, too many to
 “ enumerate. Two or three however may be properly
 “ mentioned.

“ No Patient shall go out of the Hospital without
 “ Leave. And laying out all Night shall be dismissed.
 “ The Gates for this End shall be opened no longer from
 “ Lady-Day to Michaelmas than Seven and Nine, and
 “ the othe other half Year Five and Ten, with a Porter
 “ to watch the Execution of these Orders. To neglect
 “ Prayers, Swear, or be Abusive, Expulsion after one
 “ Admonition.

“ When cured the Chairman shall enjoin Patients dis-
 “ charged, to return Thanks to their Benefactors, in
 “ the *respective Places of Worship.* Patients able to work
 “ shall assist at the Matrons Order. None discharged for
 “ Irregularity, ever to be admitted again, on any Re-
 “ commendation.

“ To avoid Offence no Patient shall *presume* to go up-
 “ on the Gravel-walk in the Church-Yard, going or com-
 “ ing to the Hospital.

“ The Rules shall be read every *Thursday.*

“ No Contributor less than twenty Shillings annually,
 “ to recommend in a Patient. And if less than five
 “ Pound, no more than one at a Time, except *extraor-*
 “ *dinary Cases.*

“ No Domestick Servant of a Governor or principal
 “ Subscriber, shall be relieved at the Hospital, except in
 “ particular Cases, as shall make a Person incapable of
 “ continuing in Service.

“ Here the Widows Mite may be intrusted. These
 “ Managers can dispose to the best Advantage in Medi-
 “ cines, at the easiest Rates ; and will go farther towards

“ answering the Ends of Charity, than Sums bestowed
 “ at random.

“ By these and other excellent Rules continues, the
 “ Doctor, many are provided for, not able, or ashamed
 “ to receive constantly from Parish Collections. They
 “ are made better by Discipline; saved to the Publick;
 “ preserved from ill Usage and Ignorance of Quacks; and
 “ at the same Time furnish our own Doctors with more
 “ Experience.

“ Infirmaries will lessen the Poor's Rates; Parishes
 “ for which Reason will be better enabled to maintain
 “ their Orphans and Aged; will lessen the Business of
 “ Parish Officers; also the Number of idle Vagrants,
 “ who will be obliged to Work, when deprived of other
 “ Charities.

“ If any one should object that more Workhouses are
 “ wanted? The Parliament are now upon County Ones.
 “ But whether they succeed or not; this Hospital is not
 “ designed to interfere with their *excellent Purposes*, but
 “ as better Provisions shall take Place, this may cease,
 “ or become a Part of that Provision.

“ *As to the Poor being averse to Restraint, or removing*
 “ *from their Families; (though as natural as to an Arch-*
 “ *Deacon)* cannot affect this Charity; because they will
 “ be taken in on their own or Friends Solicitations; nor
 “ then but in bad Cases, and according to the Subscrip-
 “ tion. Or such may be Out-Patients. But this is so
 “ far from taking Place with the generality of our Poor,
 “ that they account Hospitals a common Blessing; as in
 “ reality they are; being kept clean, in fresh Air; a
 “ proper Diet and Advice.

“ That Hospitals will occasion a resort of Poor where
 “ they are erected, is a contrary Supposition to the for-
 “ mer. However I think Beggars will rather be lessen-
 “ ed, and may be in great measure prevented (if such a
 “ thing should threaten) by making an Order that no
 “ Body should be intitled to Medicine, but those who
 “ are recommended by Subscribers. And another Or-
 “ der in the City, that whoever asks Alms, not being an
 “ Inhabitant, should be incapable of Relief, and treated
 “ as a Vagrant.

“ Some again object that there will not be Objects e-
 “ nough in the Country — to which the Doctor perspi-

“ cuously

“ cuously observes to be of little Weight with those who
 “ have minded the great Numbers applying for Relief in
 “ Winter. Or considers the public Service of speedy
 “ Assistance in *Dropsies, Rheumatisms, Palsies, Scurvies,*
 “ *Fevers.* Neither Hampshire, says he, nor any County in
 “ England can be destitute of as many suitable Objects, as
 “ will employ all our Stores of Charity. If otherways,
 “ yet two or three Cures in Surgery amply repays a
 “ compassionate Contributor, and convinces him of the
 “ Nobleness of such a Charity; *because to pay for the*
 “ *Cure, would be more than a whole Family is worth.*”

The Widows Mite, invited in this Address, if there was not some View in selling off Drugs, would intimate the Sorts and Quantities useful in recovering poor People's Health. Cleanliness, a pure Air, Kitchen Physick, and some plain traditionary Remedies kept in Families; would in my Mind conduce more to their Recovery, than long and curious Receipts, which like Venison, or Food the Poor are not accustomed too, rather turns their Stomachs.

The Orders in this Infirmary applied to sick or lame Vagrants taken in, Strangers and Servants habituated to Want or Servitude, are perhaps a commendable Discipline, but exercised on reduced, orderly, industrious Housekeepers; Men, perhaps, of better Morals than their Contributors, are not standard, a Condition they ought not to accept while there remains any Straw in their Beds at home: The contributing Parishioners are recommending what they would not like for themselves or Families, if in the same Straits; and if such equal Members must be dealt with restraint Discipline like Vagrants, &c. they in their Turns, when ailing, ought at least to be confined together in Barracks, for the better securing Health to others. But the Poor in Infirmarys or Workhouses, might be better relieved, and at less Charge at their own Houses than in them. They are free, first, from the insulting Orders of Trustees and their Overseers; no minute Blessing in a Country where their Masters are Drunk with Liberty. Secondly, they would be freer from ill Smells and Company, have a more open salubrious Air to breathe in, and under the cheerfuller Assistance of Friends and Neighbours, who for their own Sakes lend what help they can, not knowing how soon they may

want a Return. This was the old way from *Methuselah's* Days down to our Times, and there cannot be a stronger Objection against those numerous publick Receptacles, than there having been thought of so late in the Creation.

If paying for the Cure of a broken Bone, by a labouring Man (most subject to Accident) must ruin a Family; it may shew in that Case indeed, how necessary these Provisions are become. But at the same time proclaims the piteous Condition of Multitudes, who after all their Toil and Labour, should be capable of administering no other Redress on every little Disaster than the precarious Charity of well disposed Christians, continually grumbling at the Poors Rate, and with Reason, because by that they more and more learn to dread their own Fate often seeing Labourers put past Working, by any sort of Maim or Sicknes, obliged to be relieved at these Charity Buildings, and not only themselves, but often their whole Families.

To divide these Peoples Times between Labours, and Prayers for their Benefactors, imitates the Spinhouse at *Amsterdam* (a religious *Dutch* Foundation,) where Mr. *Wright* in his Travels tells us, *That as soon as the Overseers strikes up a Psalm Tune, the Lasses lay down their Work, and join very demurely, returning Thanks also at Discharge, in the respective Places of Worship,* is to me an assuming, that borders on Prophanation; a Burlesque on the Temple, and the Uses its separated to.

“ Where the Doctor observes the Idle and Vagrants “ would be obliged to work, if deprived of other Charities,” must mean, they would be obliged to work, on the hardest Terms, little better than those poor confined Creatures within Doors, a cruel Consignment of Multitudes to Sacrifice, for the Benefit of Trade. For their Vagrancy may be commonly imputed to want of Work at home, travelling all Summer out of the Countries on different Services, and oftentimes disappointed; for were Man or Woman in Health, and able to earn at home or abroad what would keep them alive, and pay the Rent of a Garret, I have that honourable Opinion of my Country-folks, that they would chuse this or lower, before the more pitiful Conditions of a Workhouse.

Men

INFIRMARIES.

311

Men who acknowledge the present Decay and Loss of Trade, in effect acknowledge this to be the Condition of our Poor ; for if Multitudes sought for Charities in better Times (we will suppose in the Reigns of King *William* and Queen *Anne*) what must become of greater Numbers, under a less Demand for their Labour? Thousands its true are now taken off for Land and Sea Service, which one would think should be a Benefit to those that stay and better their Livelihoods. Yet it does not, there is still more left then the Employ calls for, and consequently is the true Reason Beggars and Thieves increase with our raising Armies and Marines.



X

A



A

DISSERTATION

ON THE

Contents, Virtues, and Uses of Cold
and Hot MINERAL SPRINGS.

MINERAL Waters are called *Acidulæ*, from that Nitrosity of Taste in them, that argues such a Prevalency in Fact; and the Supposition our Naturalists make, of their being a *universal Acid* contained in the Earth as well as Air: Here it is seen in the corroding of Metals, the Air like a *universal Menstruum*, in Time dissolving and converting them to a Calx. It makes Acrid the Soft, and softens the Acrid. Fixes the Volatile, and renders the Volatile fixed. Produces Colours, and destroys them. No fixed or Volatile Alkali continuing long so, exposed to the Air. The clearest and driest abounds most with acid Particles; for draw the acid Spirit from any thing, (Chymists tell you) and then expose the *Caput Mortuum* some time to the Air, you may draw off more. It differs under the several Productions of Vinegar, Lemon, *Spt. Nitri. Vit. &c.*

This Acid inside the Earth, in suitable Grounds, operates to the making of Alum, and other mineral Ores. The Vitriols of Iron and Copper, and in Waters are the efficient

efficient Cause of their Impregnation ; it exists in all Minerals, and upon its Immersion, divides and subtilizes. Gives the Salutary, and prevents by the same Providential Chymistry, the Subterranean Streams from partaking of any noxious Quality. 'Tis their acting upon greasy bituminous Particles, that changes them into the Form and Essence of Sulphur.

The *Spa*, so celebrated through *Europe*, as to give all other Medicinal Springs their Name, is in the Bishoprick of *Liege*, a mountainous Country, abounding with them. The most famous of which, and best for keeping and Transportation, is the *Pouhon*, that springs up into a Basin in the Middle of the Town, though *Bru* and other Waters are said to be sometimes imposed.

Dr. *Perry*, who writes an Enquiry into the Nature of *Spa*, makes its Principles consist in the universal Acid : A neutral Salt (every Tun yielding a Pound,) a little Vitriol or Steel, and a fine and gross Sulphur ; the former of so subtle and pure an Essence, as to sell for 58 Shillings an Ounce. He a little injudiciously, as well as inconsistently, tells us, the Waters undoubtedly lose their Virtue by Time and Transportation ; yet would have us believe Dr. *Coquelet*, who practised at that Place 35 Years ; preferred the *Pouhon* or *Spa*, after 26 Years bottling, before the Spring itself in a wet Season. At P. 63. He cured a Patient very quickly here, who had not the least Discharge by Urine for a Year and a Half : Large Sweats counterbalancing the Surcharge of the Fluids ; and is surprized any Body should account it a great Prodigy.

The *Pouhon* Water turns Purple with Gauls, and subsides clear again with putting in *Quicklime*, *Ol. Vitriol*, or *Spts. Sal Armon.* ; that is, with either Acid or Alkali, which proves (he thinks) a predominant Vitriol, or rather Steel in them ; and whose Virtue is increased as Deobstructive and Deterfive, by an Incorporation also of Nitre and Salt.

They give a Giddiness and a Numbness at first Drinking, but from the Analysis, concludes them good in all Tumors and Hardness of the Hypochondria : Dissolving viscous Humours, and rendring the Blood fluxil ; correcting Acidities, and strengthening the nervous System. In the King's Evil, Sterility, Imbecility, Inveterate Quartans,

Quartans, Concretions in the Reins, *Ureters*, or Bladder, Scurvy, or Weakness of the Stomach; but must be cautiously used in Gouty, Asthmatical, or Pthysical Habits. A large Draught after 24 Hours Fasting, surprizingly enlivens and invigorates.

He believes also they destroy Worms; because an Eel, or other Reptile plung'd into it, gives a Spring, and dies immediately. At P. 58. tells us, a Dejection, or Canine Appetite, hot or cold Temperaments, a Redundancy, or Deficiency of Bile, a constipated or lax Habit, inordinate or obstructed Menstruæ, are all cured by the same *Specifick Spa*. For these contrary Disorders, continues he, arises primarily from our Accretions and Secretion (what we take in, or let out.) And a Plethora, the first Consequence of Excess and Irregularity, is removed by Fastings and Evacuations, or continuing longer, so as to offend in Quality, requires the same. (*Perry's Enquiry into the Nature and Principles of Spasms.*)

Our cold Mineral Springs in *England*, are divided into the *Aluminosæ*, or purging *Chalybeat*; such as *Barnet*, *Epsom*, *Dulwich*, *Acton*, and *Northall*; and the *Aquæ Ferruginæ*, or Diuretick Steel Waters: All the Difference that I perceive between them is, the one partaking of more Salt, the other of more Iron; and are of different Strengths at different Wells. Some we are told, by a learned Gentleman, have been found on Re-examination to have lost of their Medicinal Principles, and others, its probable have risen and fallen from their Reputation, by Art in some, and fancy in more. It is a Kindness in one Gentleman, or a Society to promote Trade to his Borough; consequently, in favouring one another's Jobbs they are supporting, their respective Interests and Estates; and what is gotten on one Side, must be lost on the other. The *Aluminosæ*, as more Cathartick are best fitted to Plethora's, Ill Habits, Cachexy, Grumous Blood, Corpulency, Vertigo's, Apoplexies, and Distempers from Repletion. The others more Diuretick, are better adapted to obstructed Viscera, Hardness of the Liver, Spleen and Bowels. Suppressed Menstruæ, Beginning Dropsies, Diseases of the Reins, Weak Stomachs, Cold Constitutions, Worms, Strengthening decay'd Nerves, and giving Turgescentcy and Warmth to the Blood. In both, three or four half Pint Glasses

at

at Intervals, may be reckoned a sufficient Dose, quickened (rather than exceed) with a little *Sal. Glauberi*, or *Polychrest*, or that made from the particular Spring; to which may be joined their external Use in Bathing; especially, when accompanied with any Foulness of the Skin and Eruptions. These, as well as the hot Baths, cleanse and open the Pores, contract and strengthen the nervous and muscular Fibres, dissolve hard Tumors, and relax Parts stiff with Spasmodick Contractions. The Caution herein is the Patient being of sound Viscera, and no Inflammatory Distemper on him. What is peculiar to our *English* Springs, is according to my Reading and Knowledge, viz.

Pancras Waters turn *Syr. Violar* somewhat Green, are Diuretick and Purgative like *Dulwich*.

New Tunbridge, near *Islington*, strikes a beautiful Purple with green Tea, Galls, or Oak Leaves; Green with Syrup of Violets, a little milky with *Ol. Tartar*; and do not curdle Milk, which argues their Alkaline Nature: they purge a little, and pass presently by Urine; and from Dr. *Moreton's* Experience, are said to cure Consumptions, especially with Milk.

Canterbury has the same Physician's Recommendation for Asthmas, Coughs, Catarrhs, Consumptions, Gout, Jaundice, Scabs; and in the Gravel, Cholick, Green Sickness, and Ulcers of the Bladder, to be Specifick.

Old Tunbridge contains Iron, Ochre, and Vitriol, esteemed by some next to the *German Spaw*; and like them are apt with great Doses, to raise Dizziness, Headach, and Flutterings.

Astrop in *Northamptonshire*, are of Irony Smell and Taste, and are said by Dr. *Lower* and Dr. *Willis*, to be good in Scurvy, Chlorosis, Asthma's, &c.

Aiford, *Colchester*, *Lambeth*, have Marine Salts; nigh a like with *Dulwich* and *Epsom*; purging with $\frac{3}{4}$ *Sal. Glauber* aut *Polychrest*, in Scurvies, Flatus, and Eruptions.

Upminster and *Brentwood*, have Alkaline Salts, correct Acidities; and are used in Vomitings, Reachings, and too copious Hæmorrhoidal Fluxes.

Holt, changes not with Galls, containing therefore its Thought, no Irony Matter, only a Nitre and Calcarious Earth, without other Salts. Some think these Waters wash

wash through an Earth of Silver. They are found Diuretick, Alterative, Sweetning, and from thence extolled in foul Juices, Impurities of the Skin, old Sores, Ulcers, Scab, and Leprocy.

Bristol old and new Wells are tepid, though nigh the River, springs up into a Fountain in the lower Room of the House, and thence drawn off commodiously with Cocks, either for those attending to Drink, or Servants bottling to send away; the Trade for it being prodigiously increased of late Years. keeping better its said than most others, and peculiarly adapted (among other Distempers) for the Diabetes, and other Defects of the Reins.

Nevil Holt Spaw, in *Leicestershire*, is said to be one of the strongest Mineral Springs in *England*, and used (those who have concern in them tell you) with the happiest Effects in Relaxations, Hæmorrhages, Ulcerations, Cough, Diabetes, Hæcticks, Gravel, &c.

St. George's Fields, Dr. *Baynard* says, cures Cancers; of late Years the external and internal Use together has been followed, to effect the same sort of Cures, and would deserve greater Commendation, were they not so nigh Town.

Shadwell Spaw discovered within these seven Years, partakes strongly of Vitriol, judged so in its rough Operation by Vomit and Stool; a Pint of it stimulating like *Ward's Pill*, and doubtless would have the same Efficacy in strong Constitutions, who may now do well at a cheaper Rate. Its Complication with Iron, fits it the better to corroborate the relaxed Fibres of the Stomach and Guts; promoting Appetite and Digestion, opening Obstructions, attenuating the Fluids, and astringing the Solids. This latter Quality is better seen in the external Use, bathing, clearing the Skin from all Eruptions, Scab, Itch, Tetter, and other Dæsedations, in a very little Time, and probably might be made successful in Impetigo's, Leprosy, strumous Tumors, and Inflammations, if their Use were preceded by Issue or Issues; because so powerful an Astringent without a constant Derivation to assist in obstinate cuticular Diseases, might be apt to return, or shew itself in some worse Consequence; but both together effect a Cure.

Glocestershire and *Staffordshire* Springs are recommended for Leprosies and Palsies.

Bux-

MINERAL SPRINGS.

317

Buxton and *Matlock* in *Derbyshire*, are for bathing or drinking in *Scurvies* and *Rheumatisms*. At the former of these, *Mary Queen of Scots* passed much of her Time before her Confinement, and at leaving the Place made this Distich;

*Buxtona quæ calidæ celebrarius nominæ lymphæ
Forte mihi posthac non adeunda valæ.*

They are tepid, the Bath an arched Room, ten Yards long, and Five and a-half wide, paved with smooth flag Stones, and a Stone Bench to dress and undress, that descends with Steps.

Knareborough, *Bingham*, *St. Anns*, *Guilthwait*; the first of most Repute, and used in Scabb, Tetter, Leprosy.

Harrigate has Variety of Waters, and frequented *Dr. Short* says, in his History of the *Hyperborean Springs*, like *Tunbridge* to the Southward.

These and other mineral Springs and Wells, multiplied in every County, for the Conveniency of those who hate staying at Home, and love travelling a little or a great Way, have continually new Buildings and Accommodations adding every Year, strengthening the Invitation of Customers, to the no small Emolument of Proprietors; who by this Means have very considerably advanced their Lodgings, Houses, and Lands adjacent. The Tenant at *Bristol Wells* told me, that within his Memory the Rent had been raised from 20*l.* to 500*l.* per Ann. At *Scarborough*, their Assembly Room, many of their Lodgings, and Conveniencies have rise since Companies resorting there, more and more every Year; a Multiplication however, that we may piously presume carries a Mark of Providence, that they should not be all locked up from the Poor, which paid for, may be often a worse Malady than that they are to remove. Now, those who cannot afford to buy *Spaw* or *Scarborough Waters*, may drink *Pancras*, *Dulwich*, *New Tunbridge*, and other nearest Home; and make them nearer the stronger *Chalybeate Springs* by an Addition of Tincture, or Salt of Steel when used.

The Essential Principles of those Springs frequented, tho' an abstruse and controverted Point, I think, may be reduced to four. First, their Elemental Parts. Secondly,

ly, Their Saline. *Thirdly*, That universal Acid above-mentioned : or what by different Authors is called *Æther*, Air, or Mineral Spirit ; and *lastly*, an Earth or Sediment, containing with it a Proportion of Vitriol of Iron.

These are all the Principles Medicinal, and obvious to Sense in Spaws, and from whence all the *Phænomena* in Experiments of them are drawn. I shall expatiate a little on each Head, with occasional Reflections on the Diseases, which such Principles and the *Regimen* directed under them, are adapted to.

First of Water. Dr. Hoffman says, all Waters contain an *Æther* or Elastick Spirit in them, on which and the various Mixtures of Ingredients, at Springs, Rivers, &c. depends their different Tastes and different specifick Gravities.

The lightest therefore, or those most abounding with Elastick Spirits are wholsomest ; the opening of any visceral Obstructions or preventing Chronical Disorders, depending greatly on the Goodness of mere Water. “ The Efficacy of Mineral Springs beyond Dispute being
“ owing mostly to the Quantity of pure Elementary Water
“ they contain, and where other pure Waters are procurea-
“ ble, they likewise will have the same Effects ; cure Ob-
“ structions, Ophthalmias, Head-achs, Cold, Gout, Cho-
“ lick, &c. p. 171.

The Purity which gives an Excellence to one before another, is tried with a few Drops of *Ol. Tart. Solut. Sacchar.* Or, *Solut. Argent. in A. F.* a less or greater Milky cast and Subfidence following, as the Water contains more or less foreign Matter and Impurity. (p. 171, 172.) We see all Animals have their Strength and Health better established than the human Race, who have foolishly deviated into a voluptuous Way of living, particularly in their Use of hot Spice, Wine, Brandy, and strong Compound Liquors ; the certain Source of most of our Chronical, and in a Manner Endemial Distempers.

Vinum, Venus Exotica sunt primi parentes Morborum.

Gout, Stone, Cholick, Rheumatism, Consumption, Tremor, Palsy, Apoplexy and Melancholy, evident in
that

that Nations unexercised in the Folly scarce know what they mean.

The Tartar of Wine, says *Boerhaave*, (p. 154.) is a strong Salt, different from every other Salt in Nature; remaining unaltered put into either Wine or Water, thence concluding the Elements of the Stone lay concealed in the finest Wines.

In some of the Distempers we contract from a preposterous Change of living, especially the drinking Part; the Blood is demonstrably changed from a balsamick to a corrosive Nature, preying on the nutritive Power, and exciting fixed or periodick Returns of Pains, Repletion, Cropulency, inflamed Eyes, red Faces, Gouts, Vertigo's, Apoplexy, and even Idiocy, or approaches to it; no Nation producing more Instances of these kinds than our selves.

A long course of Ebriety will not only distemper the Body, but weaken the Understanding, carrying Men to Hypochondriacism and Stupidity, intimated by the present Operation of strong Liquor in every drunken Fit; Men being put in a State of Forgetfulness, Childishness, and Impotency for the Time, of which Melancholy and Idiocy is only a farther Consequence, a Debility of the Brain. The Drunkard and Voluptuous, if they live long enough, habitually fixing that Weakness of Mind and Body, that were by Intermissions in their temporary Surfeits; Apoplexies from this Cause, are sometimes only an earlier Punishment, but commonly leave a Weakness both on Mind and Body.

Water therefore as far as any thing can be infallible, is the Foundation of Cure in all Distempers, where Age has not too far spent the vital Principle; with such its not so proper under any Chronical Distemper to pass immediately from one extreme to another, from high living to vegetable Food and Water, but Step by Step; otherways the Spirits will flag, and the Patient grow weak, the Legs will swell, Flesh grow flabby, less Will or Power to a moderate necessary Exercise, and perhaps, at last may bring on Cough, Asthma, Dropsy, and Looseness, to finish the Complaint; but when this is resolved upon in Adults, the Change must be gradually and imperceptibly, as it were with a Respect to Custom though irregular; then Vegetables are of the friendliest and easiest Di-

MINERAL SPRINGS.

Digestion; Water the properest *Menstruum* to dissolve Food; to wash off tough viscous Slime that frequently lines the glandular Coats of the Stomach and lesser Intestines: gets easier into the Lacteals for diluting the Blood, and restoring that Fluidity and consequently Circulation, on which Health and long Life depend.

Celsus, Riverius, Boerhaave, Cheyne, and others, have recommended Water as a universal Remedy; that it has cured obstructed *Menstruæ*, Ophthalmia's, Fever, Gout, Stone, &c. and where it has cured one, has prevented ten. All strong Liquors and Sugars contribute a great Share in that Endemial Disease the Scurvy, tainting the Breath and rotting the Teeth, e'er the Maids and the Men are become Brides and Bridegrooms; Nature kindly forwarning us by the Head-achs, Indolence and sick Stomachs, created on our Indulgence and Satiety; the Steps we are taking to rivet on our Constitutions greater Evils.

If simple Water therefore, be so wholesome a Part of our Food in a natural and healthy State, the Deviations under such Rule must be mild and gentle, in Comparison of what we now feel, and conquerable by Spaws, which replete with an alcalisate and volatile Mineral Spirit, sufficiently stimulates the Operations of Nature when flagging; not to be done so easily with Distempers arising from a long Course of Intemperance, that requires as long and steady Adherence to their Use as the Causes; and indeed were there no other Vertue in Spaws, than a Recess from the Toils of Drinking and Voluptuousness they are excellent; may be made by every Man, of as Political Benefit as Fasting and Abstinence in Catholick Countries; because the Regimen of a Spaw requires that Regularity, which at the same time it gives a Man Pleasure, makes his Excuse.

To this will be very conducing the Amusements in Journies, the Companies and Diversions at publick Places, which sooths the Mind, in room of that Devotion formerly practiced at dedicated Wells: We all know how Opinion operates towards a Cure, and whenever the Mind can be proposed to be easy and pleased, there, making a little Allowance, the Waters are best. For the same Reason, and because we can take them with the same Air and Food we have been accustomed to, we
ought

ought generally speaking, to prefer with Providence, our own Native to Foreign Fountains.

Natural Mineral Salts are, *First*, Sea or common Salt. *Second*, Nitre. *Third*, Allum. *Fourth*, Borax. *Fifth*, Sal Armoniac. *Sixth*, Epsom. *Seventh*, Nitrum Murale. *Eighth*, Universal Acid. *Ninth*, Mineral Alkaline Salt.

Common Salt crackles in the Fire; the Spirit of it turns *AF.* to *AR.* and precipitates Silver dissolved — *Allum* does not Chrystalize at the first Operation, but must be helped with Urine and Kelp. The black *Phosphorus* is made of this and Wheat-Flower, calcin'd to a certain Degree. — The discriminating Property of *Borax* is foddering Metals, particularly Gold: Fluxes them mixed with Sand, and turns Flint to Glass; its Chrystals are *Octagonal* Prisms. — *Sal Armoniac* renders Water intensely Cold; fodderes Tin or Copper, and chrystalizes Snow. — *Nitrum Murale* is produced from powdering and boiling the Mortar of Old Walls. (*Boerhaave.*)

Secondly, The Salts contained in Spaw Waters, are gained, the greatest Part by evaporating of the *Menstruum*, the Chrystals in a few Days evaporating in various Figures, Pyramidal, Prismatical, Hexagonal, as they are Sugar, Nitre or Allum. Those from *Sal Armoniac* appear like Branches of Trees. *Regulus of Mars*, like Stars. Chrystalls of Vitriol, resembles Icicles. Common Salt is Quadri-lateral, or what others say, cubical Pyramids. And Glauber's Salt, made from the two last, exhibits both Figures. In all, our Chymists observe, you may as easily divest them of their Saltiness as their Figure; whence that Art is said to give a great Insight into the Properties of these Waters, though with Deference to those Gentlemen, I think, a good Taste without any elaborate Processes; and especially backed with Experience and a Tradition of Cures, gives much better Proof of their Vertues. The *Analysis* is liable to unintelligible and unimproveable Contest.

What various Opinions have been published, concerning the Contents and Principles in most Spaws, some have said, that of *Scarborough* contains a Vitriol and no Allum, others say Allum and no Vitriol. Dr. *Wittie*, that they have Vitriol, Iron, Allum, Nitre and Salt. And some again, that they have a nitrous and marine Salt,

Y

with-

without either Allum or Vitriol. Dr. *Short*, of the *Hyperborean Springs*, says their Salts are Vitriolick; and that of all the Numberless Springs he examined, he found no other than this; or a nitrous Salt in them. His Predecessors upon the Subject, (*Willis, Tunstall and Simpson*) who had ascribed other Principles, being out in most of their Assertions and Experiments.

Dr. *Shaw* makes the Principles of *Scarborough Spaw-Water*, a Mineral Spirit. Salts, Oker, Earth, and Air, (p. 92.) and has given chymical Experiments to prove them all. And at (p. 165.) says, perhaps this Spring has a variable Proportion of a neutral purgative Salt, a little Sea Salt, Alkaline Earth, Air, and subtilized Iron. There is no absolutely perfect Method of determining the precise Contents of Mineral Waters, (*Hoffman* p. 102.) And this Uncertainty of Conclusion proves it.

But did they not differ so much about the Contents of Spaws, yet their way of Trial by Fire, any Body may see, subjects to great Alterations; Things separately innocent may be combined into a Poison, and a Poison by purging through it, made Medicinal.

Fire according to *Helmont*, destroys the *Ens Specificum*, makes a Thing what it was not in the natural Mixture. Salt and Mercury sublimated the first time, gives a very malignant Quality; but re-sublimed does every Operation become safer and safer. "The Salts that at
" first received their corroding penetrating Quality from
" the Gravity of the Mineral, are by Repetition more and
" more, broken and enter into a new and Medicinal Combination. (*Mead.*)

Hoffman who builds hugely on his Chymical Experiments as the true Foundation for discovering the Vertue of Mineral Waters, says, that in all these Springs, the Access of Air, and the Heat of Fire, strangely alters, impairs, and destroys the Connexion and Mixture of Parts, which give Medicinal Waters their Vertue and specifick Efficacy, (p. 93.)

A Child may take of Crude Mercury, gr. iij. or, of *Spt. Sal.* gr. viij. Yet from this Quantity prepared together, there results, gr. iv. *Mer. sublimat. cor.* a strong Poison, Crude Antimony may be taken to gr. xxx. Or, Nitre diluted gr. xxx. but reduced to a Powder, mix'd and set over a Fire, comes *Crocus Metallorum*, of which

no one would give in weak Habits *gr. vi. Ol. Vitriol. 3f.* would be poisonous alone ; yet diluted with two Quarts of Water not so. All Salts from Shells, Lime, or such sort of Substances, are reckon'd to have a greater Acrimony imparted by Fire ; and some Things again in a Destruction of their first Substance, receive better Qualities, as all our Mercurial Preparations.

Iron in some Preparations is relaxing and de-obstructive. *Croc. Mart. Aperitiv. — Sal. Martis. And Tinct. Ferri.* In others Astringent, *Crocus Martis Astringens.* And the Tincture drawn from the Fæces of Iron Filings, are good in Fluxes, Whites, and Gonorrhæas.

Animal Heat is something similar to Fire, whereby all Acids in Fruits, Vegetables, or any of our Viands, turn Alkalious under the Powers of Concoction ; and when they disagree, or nauseate, (Food or Mineral Waters) the Struggle is too much ; a Caution in the Use.

Dr. Lister took all the Medicinal Springs in *England*, to contain only a Limestone Salt, a common Salt, and a sulphurous Vapour, occasioned by their washing through *Pyrites*, or Fire stone, (a Fossil reckoned to partake of Earth, Iron, and Copper,) and believes them Lapidifcent on Animal, Mineral, or Vegetable Bodies. There are such Things as petrifying Springs indeed, one of which, I have seen in the Garden of *William Thompson, Esq;* at *Ebberstone* in *Yorkshire* ; where the Roots of the Trees that ran superficially, were all turned into a Rocky Substance, by the Stream that washed over them.

Kircher and *Boerhaave*, seem to have the same Suspicion, in *Men. Calculum Renis Generari.* Dr. *Short* in his *Analysis*, (p. 180.) hints the same Thing ; from the fixed earthy Substance in the Sediment of the Spaw Waters, that dried, is indissoluble in Water, and hardened by Fire. Others have taken such a Suspicion from the Crust they are apt to deposite in Bottles, or the Channels they run through ; instancing Fits of the Gout and Stone, brought on by drinking of some Spaws.

This I mention, to shew the Contrariety of Opinions concerning Waters, having no Belief myself that any Springs whatever, can have such a Tendency in human Bodies ; all Animals but Men, avoid this Distemper principally from their drinking of Water, and a Chaly-

beate Ingredient we see, rather gives them a quicker and better Passage.

To return, the Quantity of Salt our best Wells yield are trifling, compared with the Loads made in *Germany* and *England*, and sold as such, which are only a Preparation from the Bittern or bitter Liquor, that remains after the making of common Salt. A Gallon of *Epsom* Water gives no more than four or five Drams, *Scarborough* two, more or less as the Season is dry or wet; and when Genuine, makes a pleasant purging Whey: 3ij. dissolved in Water and Milk, working off three or four Stools without Gripes. By the same Rule, the *Spaw* Water may be quickened to abate of those Draughts, that without it might be thought necessary, though nauseous. This Salt is bitter, transparent, solid, smooth, crackles on hot Iron, readily dissolves, and is Alkaline, from its making strong Ebullitions with Acids.

The Third Principle of Æther, Air, or Mineral Spirit in *Spaws*, is thought to be a Communication of Steam, from a Mineral Gas: The same which Workmen in Mines frequently meet with, called Damp or Vapour; or something extremely fine and volatile (like it) from Mineral Beds they pass through; because, though detained in Water, it flies off soon when separated from the Fountain; wherefore attempting to catch it in a Bladder, bring it over a Retort, and separating from it its other Principles, as some learned Gentleman have projected of *Scarborough*, seems as Chimerical, as supplying the Assembly Room with it. 'Tis sufficient for the Purpose, that such a Spirit obviously resides in them, beyond other Waters; seen *First*, By the greater Quantity of Bubbles generated in shaking a Vial of them, in mixing with Rhenish, or arising from under an Air Pump. *Secondly*, By their answering in some little Measure the Design of Yest in Bread, which according to the Doctrine of Fermentation, is carried on in any Substances, from their Aptitude to admit an easy Entrance, or difficult Egress of a *Materia Subtilis*, or Etherial Matter, (such as *Spaw* Water contains,) the principal efficient Cause of Fermentation. *Thirdly*, They weigh, when fresh, considerably lighter than common Water, and for that Reason (its said) sit easier on the Stomach, a Consequence not always to be allowed: The Specifick Levity of some Waters

Waters above others, being no Argument of their being wholsomer or fittest for common Use: No, there is a Degree of Heaviness in Air or Water, suited to Salubrity. The Air of Mountains is more difficultly drawn in than Valleys; and the Waters there, from a Condensation of thin Vapours, Snows, or Dews, are neither so wholesome to Drink, or so fit for culinary Uses as River, Rain, or common Springs. However, if *Spaws* be specifically lighter than other Springs upon the same Level, it is in their Favour, and one Reason of their being Medicinal. *Lastly*, This Aerial Mineral Spirit, is best evidenced to us from the brisk pungent Irony Taste they have, and to which no doubt their chief Medicinal Efficacy is owing.

This Spirit is incoercible, and flies off in a very little Time warmed or exposed to the Air. *Pymont*, the briskest of the cold Springs, will lose its Virtue in twenty four Hours so exposed; nor will the best adapted Cement, preserve them many Weeks; Men concerned in the Cement and the Sale, tell you they will remain good after eight or nine Months bottling; and shew the same Phœnomena as at the Spring; but afraid of the Allegation, advertise at the same Time, their Importations are fresh.

To the Subsistence of this Mineral Spirit in *Spaw* Waters, comes the Phœnomenon of turning to a purplish Colour, by mixing the Powder of Galls, Pomegranate Rind or Flowers, Balauftians, Tea, or Oak Leaves, more or less, as the Principle abounds: Done by the Absorbency, or astringency of these Vegetables, which weakening the Menstruum, make the darker Particles of Iron more evidently shew themselves. Dr. *Shaw* thinks this Purpling Analogous to the making of Ink Powder, with Copperas, Galls, and Water; for the first is a true Vitriol of Iron, the second a Stiptick, and on their Mixture with Water, the Iron becomes soluble, shewing its opaque Parts. All astringent Vegetables like Galls, &c. will discover whether Water be of an Irony Nature or not, and thinks their separate Infusions mixed, (or Iron alone) would make Ink.

What may be farther learned, from this short Description of the Mineral Principle or Spirit, is *First*, That as a purple Colour will follow on an Infusion of Galls, Oak Leaves, &c. so the failing of that Phœnomenon, notwithstanding

withstanding what may be said of Bottles well stopped and cemented, and taken up at a dry Season; they are plainly, by want of such a Sign, become rapid and useless; improper either for weak or sound Visceras. *Secondly*, It shews all *Spaws* most effectual at Spring Heads; before this Principle in which their chief Virtue exists is broke or lost. *Thirdly*, It distinguishes them sensibly from Waters of other Qualities. Common Waters, or those having a nitrous Predominancy, never alter with these Infusions. Violets turns these blue, if an acid Salt be in them red, if Alkaline green: When a Sulphur prevails, they turn muddy instead of purplish. Solution of Gold, Silver, or *Sacchar. Saturn.* changes them black, *Spr. Vit.* white, Tincture of Brazil Wood red, and when used, change the Silver in your Pocket to a yellow or gold Colour.

The *Fourth* and last Principle is a Vitriol of Iron, bearing a Proportion to the Water of about One, to One Hundred and Sixty. *Boerhaave* says, there are five Sorts of Vitriol, all owing their Original to Iron, or to that with a little Copper; from whence, according to their Proportions, comes the Variety he thinks, and different Efficacies of Springs.

Hoffman, with his usual Accuracy says, There is somewhat of a Vitriolick Nature found in Mineral Waters; the Taste and Sight confirms it, by turning Inky with Galls, but then this is not the *gross Vitriol in common Use*. (p. 104, 146.)

Of this Vitriol of Iron, some small Portion is found in the Earthy Sediment, because the Precipitation of *Scarborough Spaw* Water, with Powder of Galls, turns black. And when dried and scorched, some considerable Particles rise to the Loadstone, also on a Reincorporation will continue still slowly, to turn Syrup of Violets green: Iron moulds Linen, and takes off the Acidity of *Ol. Vitriol*; though others say, they will never afterwards exhibit the same Taste or Colour, mixed with Galls. The whole shewing us the Mineral Part of Water, that when fresh, exists in one Form, inimitably united at the Fountain, is confounded and lost in the Analysis, or a long keeping. There they may be efficient by a natural Piece of Mechanism; *the specifick Gravity and Figure of the constituent Parts of Iron.* Their Weight and Solidity increasing

increasing the *Momentum Motus* of the Fluids; necessarily breaking through (as far as Medicine can) all Concretions and Obstructions. Assisted *Secondly*, by the pointed Figures of their Particles (judged of from the Roughness of their Taste) a rugged Asperity, whose Points improve the attractive Force of the Blood Vessels and Solids in Circulation, but any other Way must be very precariously made use of.

The Scarborough Spaw.

All Purging, or Diuretick Chalybeate Springs, have the four Principles above, demonstrated to Sense: And as a Priority of Excellence, is given by most People to this or that, as the Mineral abounds: Company and Diversions invite. *Scarborough* may on each Account claim a first Place.

There are two Springs in the Neighbourhood; one more purgative; the other nearest the Town more Chalybeate; and both of a brisk Irony Smell and Taste: Besides these larger, there are numerous Ebullitions up and down the adjoining Sands, that strike Purple as well as the Capital Springs: Arguing every where about the contiguous Grounds, that there are Plenty of those *Strata* of *Pyrites*, Iron, Stone, Okre, or *Minera Ferri*, through which the Water pass, and find a never failing Source of Impregnation.

That commonly used, being at the Bottom of a high Cliff, has some Security against the sudden Weakening and Alteration many other Springs feel, from wet Seasons, too much Sun, or Winds. The Distance a short easy Exercise of a Mile or two from Town, on a fine smooth hard Sand; where, at the Season, Horse Racing and other Diversions are used: And as both are open to that Grand Azure expanse the Ocean, where Ships, the Glory of the Sea, are continually delighting the Eye, and with the same Wind passing adverse, (some in order to Load, and some to Unload) gives it a Precedence both for Pleasure and Use.

——— *In tam diversa Magister
Ventus & Unda trahunt.*

MINERAL SPRINGS.

*These with the Norths in triumph Sail,
And those with Ebbs can stem the adverse Gale.*

The Mineral here is found by many Experiments to abound ; not so Aerial or Diffipable as some others (Proprietors say ;) for after the strongest Exfuctions of the Air Pump, the Water still exhibits a Purple mixed with Powder of Galls ; and keeps better when bottled ; and cemented on the Spot.

At the Spring, four or five half Pints gives two or three Stools ; and at the same Time exhilarates, says my Friend.

*Frigidior Thracam nec purior ambiat Hebrus,
Infirmo capiti fluit utilis, utilis alvo ;
Hæc seatebræ dulces & jam si credis amænæ,
Incolumem tibi me præstant septembribus horis. (Hor.)*

When this is found too great a Measure every Day for a feeble Stomach, as it sometimes may, inducing Qualms and Sicknefs, take less, and quicken it with a little *Sal. Scarburgenf.* Or take Whey made from a Dram of the Salt, and drink with Milk. Of this more under the following Head.

The General Method and Use of Spaws.

The Age, the Constitution, and Nature of the Distemper, are always to be respected, in a Course of Medicinal Waters. If the Viscera are weak and unsound, (the principal Objections,) then the Mineral they contain, may give a greater Velocity to the Blood than will suit the Elasticity of the solid Parts. Or in other Words, the increased Motion may rupture their Membranous Teguments. Whence great Caution must be taken in the Measure, the Manner, and Continuance of drinking them.

The Season should be Summer : The Springs being then of greatest Virtue ; and the Distempers they are appropriated to, more accessible : Human Nature, like every Thing sublunary, receiving Life and fresh Hopes with approaching Suns. They should also be at the Fountain, *Dulcius ex ipso fonte.*

Previous

Previous to the Course, should be two or three Days Rest after a Journey, and a gentle Purge of *Lenitive Eleſtuary*, *Manna*, *Crem. Tartar*, and Salts, or the Infuſion of Senna with ſome purging Syrup; a Practice approved by the moſt judicious, before all Phyſical Courses, and preparative to any great Operations. Here it carries off too great a Mucoſity or Viſcidity in the inteſtinal Paſſage, thereby giving an eaſier Admittance to our Conſtitution by the Lacteals.

The Quantity taken at the Beginning, may be two Half Pints, ſupplying a little of the Salt; I ſay, rather than create nauſeating; and ſo ſteal by degrees into the Cuſtom of three, four, or five. Large and repeated Draughts, are not taken down ſo kindly till thus reconcil'd; and for the ſame Reaſon, I would chew at the time of drinking, Carraway Comfits, or a Candid Stomachick Lemon, or Orange Peel, to giſt the ſwallowing. If ſome weak Stomachs ſhould require them warm, let the Flaſk be ſtopped, and put in *Balneo Mariæ*.

To theſe Rules, we muſt always add a Regularity in the Non-naturals. We ſhould uſe a moderate Exerciſe, of Walking or Riding, in the Morning after Drinking; a natural and kind manner of aſſiſting Secretions and Evacuations; have our Sleeps as near as will conſiſt with Decorum, at one conſtant Hour, and at Meals to be abſtemious; the Dinner not before the Waters have paſſed off in a Stool or two; and Supper three Hours before Bed-time; of ſuch Meats, Fiſh, or Fowl, as are of eaſy Concoction, and at the ſame Time hit the Palate; but to avoid all Salt Meats, ſtrong and pungent Vegetables; compound Sauces and Diſhes, Pickles, and every thing elſe of ſlow or hard Diſeſtion; never exceeding two Glaſſes of Wine with Viſtuals; nor at any time elſe a ſtronger Potable than Small Ale. Such Conformity and Way of Living, added to the Spaw Course, is with many a compleat Cure.

Some for Diſeaſes of the Breſt, infuſe Botany in them; of the Uterus, Balm and Pennyroyal; in Ulcers of the Kidneys, Ground-Ivy, Scurvy-Graſs, Buckbean; Cholicks, Camomile; Stone, Pariſley; and as a Febrifuge, Plantane. In tender People alſo, who cannot attend a Spring, without the Hazard of catching cold, a Whey is often ſubſtituted. Boil a Quart or three Pints with a
little

MINERAL SPRINGS.

little Nutmeg, and at the end throw in Half a Pint of Milk; if taken alone, damask them; if their Vertue is suspected to be abated, brisk them up with a little Rhenish Wine, a few Grains of *Sal. Chalybis*; or two or three Drops to a Draught, of either *Spt. Vitrol. Nitri. aut Sulphur.* and when minded to increase them as a Purgative, add an Ounce of *Manna*, Syrup of *Peach Flowers*, or *Roses Solutive*, in the first Draught.

Three or four Months Course is another requisite. If the Distemper be chronical or stubborn, there must be time for the Spirit and Alkaline Salts of these Waters, to take off the Sharpness, the Stagnancy, or Viscidity of such distemper'd Juice; it is the gentle and continued instilling into the Mass of Blood, and so our Constitutions, that must give Spaws here, or indeed any medicinal Process, a proper Force and Success; Habits being neither acquired, nor mended in a Day: Cancer, Poison, Gout, Stone, &c. lay in their Seed some time, before they display their tormenting Symptoms; and if we really mean to remove them, it is as absolutely necessary to persist in a Regimen a long time; what appears weak and trivial simply, may be of the greatest Efficacy in a long Use: Dropping of Water continually wears the hardest Stone; your Tread, the Paving Pebble, and repeated Strokes puts Heat into Iron.

There is however Caution to be used in the Continuance or Quantity swallowed, they promote more than strong Liquors sensible Perspiration; and hinder the insensible much the wholesomest Discharge; since these are minute Particles that have pass'd through all Digestions, and become of no Use in the Body; nay, unless climinated by the Pores, are the common Rise of Fevers, Plethora, &c. Sweat is apt by large Quantities of Water taken in without Thirst, to make faint, relaxe the Solids and pall the Stomach; for this Reason I moderate their Dose, and fix a Course of three or four Months the Height of Summer; indicated I think by Providence, that brings on after this, wet and cold Weather, unfitting them for medicinal Use,* or Invalids for travelling; and

* The German purging salt Springs, have the same Taste, and Vertues; and the same Quantity of Salt in Winter and rainy Weather,

and when Patients have found a Benefit by one, they may repeat another and another Season.

Too long a Course, or the inadvertent Use of Spaws, besides what is mentioned, produce other ill Symptoms; the Purgative Waters mostly a Thirst, slow Fever and Itching; the Diuretick more often nauseous, Head-ach, and Pain at the Neck of the Bladder; both of them sometimes cause undue Digestion, large Fainting Evacuations, Somnolency, a scalding of the Anus, Piles, bloody Stools, and Pain at the Sphincters; Symptoms that reflect ofteneft on our own Discretion, because that Power in Waters that thus irritates, by a skilful Direction is meliorated to a curative Purpose. Any of those sinister Accidents therefore intervening, we are to take the Alarm; challenge our Conduct, reform and intermit Drinking for some Days. To use Lenients, Purgings, Clysters, mild Catharticks, and Anodynes; till vanishing, or at least remitting much, we may cautiously return, and very reasonably, under better Regularity, expect Relief in *Hyppo's* or *Hystericks*. In *Stranguary*, *Suppression of Urine*, *Dysentery*, *Cramp*, *Convulsions*, and *Nervous Disorders*, *Repletion*, *Inappetency*, *Worms*, beginning *Dropsies*, *Jaundice*, *Gout*, cold *Sweats*, *Catarrhs*, and other *Defluxions*; in *Rheumatick* and *Scorbutick Pains*, *Asthma's*, *Hecticks*, *Pthifick*, and *Consumption with Affes Milk*. *Sterility*, *suppressed Menstruæ*, and most effectually as an Alterative and Deobstruent, in all beginning Hardness, Tumor, and Pain of the Bowels. This last I take leave farther to illustrate in the History of my own Case.

OBSERVATION.

Having been six Months distemper'd with a Jaundice, the Disappearance (at last) left a deep obtuse Pain in the Right *Hypocondrium*, felt more obscurely while that Distemper was on. This Pain when all other *Icteric* Symptoms were vanished, by Degrees came to such Uneasiness, that as constantly as I sat down or bowed myself, it was very troublesome; and could not at any time continue long

Weather, as in the heat of Summer. Hoffman's New (*Inconsistent*) Experiments, p. 86.

MINERAL SPRINGS.

long so, without my Hand close pressed upon the Part to ease it; yet walking or standing was as certainly free.

This I took to be an Obstruction of the *common Chole-duct*, or some considerable Branches of the *Biliary Vessels*, spread through the Liver and communicating, (an Adjunct, if not the sole primary Cause of Jaundices.)

I had purged often, used emollient Oils and Plaisters, Volatiles, Flannels, and now and then a cold Bath, for two Summers without Relief. A fixed Pain, and an Apprehension from it of the old Distemper returning, determined me to use some Spaw, and being called on Business to the West-Country, would seek the Recovery there, mix the *Utile Dulci*. *Devon, Somerset, Cornwall*, have Variety, and I am not fond of this or that in particular, from the Inducement of Company, which engages less Phlegmatic Constitutions, nor popular Eulogiums of this beyond that, but account all good, just as my Taste, and the Purpling tells me they are impregnated. Iron and Steel are certainly the best Deobstruents in the *Materia Medica*, and such Springs a natural Preparation of it.

I made my Journey in the *Exeter Coach*, the Shocks in that Carriage bringing more present Alleviation; and I thought also might help to loosen the Matter intended to be scowered off with Spaw Water.

At *Plymouth* I instructed myself in three or four Mineral Springs; among them, that of *Tavistock* bears the best Repute, and of an easy Price; yet for my Use, I preferred one in the Parish of *St. Landulph Cornwall*, called *Bloody Bones*, which no Body except the neighbouring Parson heeded; and who told me of several great Cures he had known performed by it. The Taste and Phænomena exactly answered to *Scarborough, Eglingham*, or any other of the Northern Mineral Springs. The Bottom of the Cliff whence it issued, was a Sort of rusty Alcove, whose Dew or Sweat united into two or three slender clear Streams; the largest whereof would be nigh Half an Hour in running a Gallon. The little Channels made in its Course through the *Beach* to the *Leake*, as well as the Alcove itself, were all lined with a nocturnal *Crocus Martis*; changed any Sort of Rind or Reed, that I placed for running the Stream better into a Bottle, very black with twenty four Hours running; yet corked never so close,

close, made no change with Oak Leaves, after two or three Days keeping.

My Lodging was at *Karr-Green*, a short Mile off for Exercise, and having blooded and purged, began drinking in *May*, a Quart every Morning early, and fasting, unless a few candid Carraways to gust the Draughts down; increasing in a Week to three Pints; then thinking that where the Mineral was adapted to a Case, the more and faster a hale Constitution could swallow such Water the better; and that *One* might reconcile the Load, by diversifying the Taste, to be done by different devised Methods of uniting them with our ordinary Food; wherefore, besides my Morning Dose, I procured the Water to Brew and Bake with. For Broth, Tea, and Punch, which though of a dingy Colour, went agreeably down in their Turns, from the expected better Success: But herein I was mistaken; for endeavouring to enlarge the Quantity by every of these Methods, I found in a Fortnight great Nauseating, Scalding Bloody Stools, and Pain about the Region of the Bladder.

I saw the Error; made an Intermission of ten Days; and in the Time took two or three mild Catharticks; when the Accidents dispelling, I began as at first, and brought myself by degrees, to drink two Quarts or more with Pleasure in a Day, without using any, or very little other sort of Liquor; thereby the better to know if I mended, what Regimen had done it. My Exercise was moderate Walking in a Morning after drinking them; eating of the lightest Meats, only once a Day, and Riding in the Afternoon.

By *September*, (for I continued the Course all Summer,) the Pain at my Side had grown much easier, and in a Month or two afterwards, found myself wholly freed, without any return to this Day; *now six Years*.

Thermæ; or hot Sulphur Springs.

The most celebrated warm Springs in *Europe*, are *Aix la Chapelle*, and the *Caroline* in *Germany*. The *Bourbon* Springs in *France*, and our own of *Bath* in *Somersetshire*; all of them by the most curious Enquiries and Examinations, abound with a *mineral Sulphur* and a *small Portion of Salt and Steel*. These and their Heat obvious to Sense
are

MINERAL SPRINGS.

are the Properties in which their peculiar Vertue subsists; and what more likely to answer a medicinal Purpose than these Ingredients, so naturally mixed and blended. *Sulphur* in the diverse Preparations of it, is one of the greatest Purifiers of the Blood, bridges the Effects of Mercury or any active dangerous Medicines. *Æthiops* given to ʒi a Day is superexcellent in all scrophulous Cases, continued with Discretion; Fluxion of the Eyes, internal Ulcers, Rheumatism, and particularly cutaneous Diseases; the natural Warmth for Bathing, or taking inwardly, giving in these Springs additional Force.

* *Encheireticks* who trace the Contents and Vertues of these Springs, by Chymical and Philosophical Dissections, as the sure Foundation for a regular Administration of them, tell us, that excepting one or two of the German hot Springs, there is not the least mark of *Sulphur* in them; particularly those near *Frankfort on the Main*. They have found out also, after great Pains, that there is no precise way of knowing their Contents; that hot and cold Springs have the same Ingredients, Virtues and Effects; their Goodness principally owing to the Element of Water; and that other pure Waters without the Mineral, would answer the same End. *Hoffman*, p. 56, 110, 147, 171, &c.

This makes me always think our Smell and Taste a better Proof of the Ingredients than Philosophy; that comes labouring with Contradictions.

Sulphur is not only evident to these Senses, but is seen in Exhalations from the Waters; particularly, *Aix la Chapelle* has a sulphurous Cream always upon the Surface; they collecting at times, several Pounds of the True Flower of Brimstone, sublimed by Heat against the Arch and Top of the Well Rooms; of such Purity and Subtility by so natural a Piece of Chymistry, that its in very great Esteem, selling for twenty times the Price of the common Sort made by a Furnace. (*Perry*, p. 94.)

Dr. Brown in his Travels through Germany, tells us, he saw in one of the Wells of these hot Springs, Brimstone of an Inch thick; other lesser Indications of *Sulphur* in all, is their changing Silver yellowish, turning
white

* A Word made from Chymists beloved *Encheirests*.

white with Galls, conflicting with Acids, turning Milk, and precipitating with *Alkali*.

The Salt contained in these hot Springs, is extracted by making an Evaporation by boiling, and putting it to filtrate, the Salts will go off with the Water about a Dram from a Gallon, and the Sulphur Part remain in the Paper, of an Alkaline Nature, seen in the Effervescence it makes with Acids, but expos'd long becomes neutral, imbibing some Portion of that universal acid Spirit in the Air; and is then of piquent Taste, melts presently in a Crucible, and fumes like burning Sulphur.

The great use of this Salt, is opening the sulphurous, and supposed irony Particles in the Water, to a better Efficacy; for while these attenuate, rarify and resolve, that stimulates and irritates the Solids, to more perfect and absterfive Secretions.

The Existence of Steel in hot Springs is much debated; why its thought a Principle in them, is some Phænomena like the *Chalybeat*; though so subtle as to be lost the time they are cooling. There is something of an irony Earth perceivable in their Taste fresh pumped, and a bluish Tincture from the Infusion of Galls. They deposite also an okery Sediment in their Pipes, which washed and calcined contains some Particles attractable by the Loadstone, and they conflict with Acids. *Secondly*, All our Earths partake something of this Mineral its thought; particularly, red and clayey Grounds, more dispersed by Providence than other Sorts, Iron being more universally necessary and serviceable to Mankind. Dr. *Oliver* (p. 16.) allows at *Bath*, a vitriolick Steel evident to Sense, though quite lost when cold; and that the mineral Substance obtained by Distillation and Evaporation, makes not $\frac{1}{300}$ Part of the Contents.

Dr. *Cheyne* is so convinced of these irony Particles, that accounting for the heat of our *Bath Waters*, he thus explains it. Mix says he, Filings of Steel up to a Paste, with Powder of Sulphur; put it under a Cock that drops regularly, and you will find the Paste to ferment, giving the Waters that come off, the same Heat and Virtue with the *Bath*.

The Heat in these Springs, how communicated has been, and still is variously controverted. Some think it owing to the Rapidity of a Stream, in various retrograde Turnings,

Turnings, where if the Channels at the same time are conical, to make a greater Resistance with their Sides; and the influent Water of heterogeneous and dissimilar Particles, they may together excite intestine Motion and Heat. Elastick Fluids, says *Boerhaave*, generating it by *Attrition. non Elastic* (as Water) by a vast impetus through narrow Cannals. But others doubt whether the strongest Agitations would give Heat to Water actually cold; besides the gentle Ebullitions of Fountains seem to intimate to us there is no such impetus.

Some place this Heat to sulphurous and iron Marcasites already heated and inflamed in the Bowels of the Earth, through which the Waters passing, by a mutual Action and Re-action upon one another, the Water becomes not only impregnated, but heated (*ex motu fit calor*) and capable almost of resembling Flame upon the Access of external Air; where Cracks or Fissure in the Earth, more at one Place than another, will admit it. The Dews drilling through the Crannies of Mountains, says, *Dr. Cheyne*, fall on a Bed of Iron Oar, wherewith impregnated, and ouzing afterwards on a Bed of Sulphur, ferment, bubble, &c. *Dr. Oliver's* Account is in much the same manner. *Dr. Chrovet* supposes a Subterranean Cavern with a Bed of Sulphur, taken fire at one End, throwing its Flames about, are quenched in the Waters, and so heats and impregnates (*Perry*, p. 97.) Several simple Bodies heaped up will produce Heat, sometimes Flame, *Bohemian* Pit-Coal, Hay, or Barley, not well dry'd. Water and Quicklime, Sulphur and Steel, made into a Paste with Water, Iron Filings, *Ol. Vit.* and Water mixed. Leaven or Yeast in Baking or Brewing, intimately mixed, not only excites the intestine Motion of Fermentation, but gives actual Warmth; and this from the Air or Æther contained, and Heterogeneity of the Ferment, which stirred up well under due Circumstances, commences a Conflict immediately. In Chymistry there are various Mixtures that display this Phenomenon. *Spt. Nitri. aut Vini*, with *Ol. Tereb. Caryophyll.*, *Sassaparilla*, aut *Carui. a. p. æ. Ol. Vitrol.* with *Spt. CC. Ol. Tartar, per deliquium* & *Ol. Vit.* *Boerhaave* in his Elements of Chymistry, (p. 63.) mixed two Liquors 3j. and 3ij. cold, that in a Moment boiled up and burst in a beautiful Flame. If in Vacuo (p. 67.) it tore every thing

thing to Pieces. The Chymical Oils of Aromatics, mixed with a Liquor extracted from *Sal Nitri*, he found more powerful than Gunpowder; raging spontaneously and without Fire, with many other more pernicious Experiments, resolved upon the Principles of Acid and Alkali, which in Prudence he conceals.

The Effence of Acid consisting in the Length, Sharpness, and Hardness of Parts; the Alkali in being Porous, and these Porosities Oblong, Triangular, Sexangular, &c. apter to imbibe this or that Acid with more or less Ebullition, as it is proportioned to their Holes.

There must however be a Medium to make the greatest Conflict; put a Quantity of Spirit, or the Oil of Vitriol, which is stronger, on some Filings of Steel; the Salts are so condensed as to make little Impression, but when weakned with three Parts Water, it will fall with more Velocity on the Iron, as the Particles of that will also more attract them; from which Rapidity and intestine Motion, comes a violent Heat; and in time a Solution.

Again, if this *Menstruum* is not good in its kind; or you weaken it too much with the Water, it will not succeed. Nor will it very little on Brass or Mercury; though *Spt. Nitri*, a weaker *Menstruum*, will; shewing a * Medium necessary, and extolling the Divine Chymist, that as easily brings a due medicinal Mixture to these Springs, as Freshness to Salt Water barely by transcolating through a Cloud.

Others resolve them by that Elementary Fire, that is more or less contained in all Bodies, who have severally just such a Proportion, and is a chief Principle of Vegetation to all Things above or under the Earth. Not generated *de novo* as Culinary Fires are: but has been always the same from the Beginning, in all Bodies till some Cause collects, as others may strengthen it. A Percussion of the coldest Steel, or the coldest Flint in the coldest Weather, will produce it. Steel put into an Air-Pump, on Exsuction, the Air contained within the Steel

Z

bursts

* In Electric Bodies the same, a gentle Heat or rubbing improves their attractive Vertue, but with too much its lost.

bursts out with prodigious Force and Violence. Vinegar on Crabs-Eyes or Chalk, has a Resemblance of this Force and Elasticity. How explosive is *Aurum fulminans*? and some other chymical Preparations? *Alcohol* having a Mixture of *Spt. Nitri. Sal Armon. Ol. Vitriol.* or the like, rises the Thermometer very much. (V. *Boerhaave.*)

To apply this, although these Experiments be in Air, the *Pabulum* of actual Fire and Flame, without which they could not be animated or live; yet it does not hinder Heat from being produced and generated within the Earth, and so communicated to Waters; and these are probably by Marcasites of Iron and Sulphur, that contain more than other Substances of this Elemental Fire; and where Air can be admitted with the Water, will still grow warmer, which we see in some Places and in some Springs, and not in others. They seem the same to the Earth as those Spiracula of Vulcano's; only being entangled in Water and but little Air, smoke without Flame; some Air every where accompanies Water is seen by the Elasticity, Bubbles ascend without Fountains, and the Conflict must also, I think, be nigh their Issue, or the Waters would cool again; cease or relax, whenever any Accident should divert or obstruct that Course, or bring any other cold Spring to mix with it.

I have thus far expatiated on the Principles of hot Springs, and produced the several Ways simple or mixed Bodies conceive Heat, to suggest the better concerning that found here; but on the whole, I think the Subject obscurely enlightened. The principal Thing which concerns us in them as ailing and distemper'd Mortals, are their salutary Effects, so universal, so cheap, and easy, in respect to officinal Compositions, that Men have great Reason to praise and magnify the Benignity of Providence that has appointed them.

Aix la Chapelle is distinguished from other hot Springs. *First*, in being the hottest; *Ray* says it will boil an Egg. *Dr. Brown*, that they must cool twelve Hours before they can be used. And, *Secondly*, in the Predominancy of Sulphur; both together making them more nauseous and more purgative drank at the Fountain; and yet *Hoffman* tells us, (p. 112.) That the *Germans* drink of those or the violent hot *Caroline* Springs to ten or twelve Quarts

Quarts in a Day, and when they purge or vomit by such immoderate Doses, it is without Sickness, Loss of Appetite or Strength; by Urine they go off with Pleasure, without Strangury or Sharpness; and by Sweat without Faintness or other Disorder.

Perry, (p. 106.) That our Bath Waters more rarely pass by Urine and Stool, mostly by Perspiration; and the better assisted by Exercise or a warm Bed. They promote Digestion, warm the Stomach, correct redundant Acidities, resolve and attenuate all gross and viscous Concretions in the Fluids or Solids; exterminating many Chronical Diseases, Schrophulas, stubborn cutaneous Eruptions, Leprosy, Asthma, Jaundice, Rheumatism, and are accounted Specific in Venereal Decays, Diseases of the Reins and Ureters; forcibly dissolving and expelling Gravel and Stone.

Brought to a moderate Warmth which they do by Cocks to every Patient's Taste and Infirmary; they are also bathed in commonly, in order to resolve fixed Tumors and Pains, contracted or Paralytick Limbs, and spasmoidick Disorders from excessive Heats and Colds; but regard must be had to the Heat and Continuance of Bathing, considered with the Distemper and Constitution; for incautiously used, its apt to give Head-ach, Palpitation, Intermittent Fever; induce Sleepiness, a Distention of the Body and Feet, and by the *too much*, while it relieves a lame Limb, may deprive or lessen another's Strength and Motion.

Bath Springs, though very warm, are some more moderate; that of the *King's Bath*, (most frequented) to my Feeling, seems like an equal Quantity of cold and boiling Water thrown together; the *Hot Lepers Bath* very nigh, as three Pints of boiling Water would be with a Quart of cold, just tolerable to bath in, rather astringing than opening the Pores, contract than relax stiff Joints.

The *Bath* was discovered, we are told, by King *Bladud*, (a Descendant of *Brutus*, and Cotemporary with *Elias*) who dedicated the Waters to *Minerva*; his Statue erected in the Middle of the *King's Bath*, which, and the *Queen's* that opens into it, had formerly handsome Crosses, removed with Superstition: Round the lower Part hang Crutches, and other *Votivæ Tabulæ*, though

MINERAL SPRINGS.

few of modern Date. I remember only one of all that have been cleansed of late Years to be thankful, and that was a Gentleman from *Twickenham*, in *Middlesex*; who the Inscription says, *moved with that Leather under his Breech, unable to walk or stand, and was cured by these Waters.*

They were by better History little known, at least little frequented till Queen *Elizabeth's* Time, and then only for Bathing; the internal Use that now often accompanies, has been introduced by the present Age. Mr. *George Long*, from *Shipton Mallet*, 1691, having first given them this Reputation. Dr. *Oliver* says he drank them, and nothing else, except a little Wine now and then for near two Years; by which Means, from a perfect Cripple, with Stone, Gout, and a quite broken Constitution, he miraculously recovered, and renewed his Age. This first encourag'd them to be drank so universally as they now are, being a Demonstration of their great Alterative Strengthening and Balsamick Virtues, (p. 36.)

They are let off every Evening, the Springs filling them a-fresh for next Morning's Exercise, which is with most People pretty early, drinking a Glass or two from the Pump, perhaps when in. The Waters are clear, of agreeable Taste, (*nitro sulphurous*) are observed near an equal Height and Quantity in all Seasons, flowing to about four Foot, and Iron Rings about the Wall, pointing out the Height; retain their Heat longer than other Waters made so to the same Degree by Fire, and are altered at several Baths, (by Cocks) on particular Occasions; they all communicating its thought, and only differing as they are nigher to or further from the main Spring.

The Cross Bath had Decorations from the Earl of *Melfort*, who in King *James II's* Time, did it in Memory of the Queen's Conception by the Help of these Waters; it is private and most temperate, therefore endured longer without Heat and Fever, that will attend the too long Use of the others: This frequented from a pleasing Temperature, and having its own Springs, in Hysterical Cases, and Contractions of the Tendons. Those in old Rheumatick Pains, Achs, Palfies, and Cholick.

Their

Their internal Use are appropriated to weak decayed Constitutions, debauched Stomachs, and Pains there; Ulcerations of the Bowels, Cachexies, Scurvies, Jaundice, or Dropsy, proceeding from Indigestion, Gout and Stone, taken at the Intervals from Pain. The King's-Evil, Strangury, Womens Diseases, *Fluor albus*, and Barrenness, even Pulmonary Cases, (Asthmas and Consumptions) taken when they have stood to a Milk warm; Hot they are not so agreeable here, and quite Cold have neither Taste nor Smell; but a gentle natural Heat applies their Balsamick Parts with more Success to the Vesicular Contexture of the Lungs; and are thus peculiarly fitted to the Strengthening of the Nerves, restoring the Tone and Elasticity of the Solids.

The Dose after previous Purgings, may be three or four half Pints, leisurely in a Morning fasting; and tho' hot from the Pump rarely nauseate, but rather stops vomiting. Dr. *Cheny* adds a Pound and a half at Dinner, half a Pound in the Afternoon, and the same in the Evening, with such a moderate Exercise accompanying, as does not promote Sweat, and to be continued a five or six Weeks Course in Summer, unless in some obstinate Cases, and then longer, and at any Season.

Baynard found Bitters agreeable, Wild Sage, Harehound, and Hops; which last he recommends in a Beer of moderate Strength, as Diuretick, Antiscorbutick, Stomackick, and good against Stone and Worms.

They will purge a little at first, but if that increases, the Stomach palls, a Vomiting, Sleepiness, or Giddiness ensues; it indicates the Quantity too much, too fast taken, or too long continued, requiring an Interval; and that the Patient be put into a warm Bed to perspire more, and take down some Aromatick hot Wines, Anodynes, and Cordials.

Externally they are experienced to be a kind and friendly Fomentation, excellent when pumped or immersed (in part or entire); for all Cramps, stiff Joints, contracted Limbs, paralytick Consequences of *West-India* dry Belly-Achs, Gripes, Cholicks, Nephritick Fits, Hypochondriacism, Convulsion, Epilepsy, and Tremors, where the Conscious is sound, they being found plainly in the Cures they perform, to have a corroborating as well as

MINERAL SPRINGS.

relaxing Power, and joined as they are of late Years, are found to answer these Ends better in cutaneous Defecations; particularly, Bathing opens the Pores for discharging those acrid Salts, which the Waters inwardly are diluting and preparing for Expulsion.

Pumping is usually at Bed-time, to some hundred of Strokes; on the Head, Neck, Shoulders, Arms, or Legs, and in particular Affections wrap in Flannel.

The Inconveniencies People are found Subject to in warm Bathing, is the great Discharge by the Pores rendering costive and thirsty, and subjecting to Cold. To guard against this, at *Bath*, they have a sort of close Chairs, well lined, that take Patients up at their Bed-Chambers, and waiting till they have done, hasten them back in dry Flannels, where they are immediately put into a warm Bed; a Guard against the ill Consequence of cooling all at once, after so general a Relaxation. Some pass from a hot into a temperate Bath instead of this, to cool by Degrees; and if Rule cannot always avoid Disorders, forbear a Time.

Warm Bathing is also in the regular Management a Preparative for the Cold; in many Cases very necessary to follow, for when the Humors are become more fluxil, the contracting Power of the Cold Bath will often perfect the Cure, prevent catching Cold, that a long Relaxation by Warmth subjects to; and makes insensible Perspiration more uniform and beneficial.

BATHING.

Bathing as an Emblem of Purity, has been put into the religious Rites of *Gentiles*, who always washed before the Sacrifices. Of *Jews* and *Mahometans*: The *Turks* in every Town almost have a Publick one; and the Building of them thought an excellent kind of Charity, as Washings were required in their Religion, and at the same time so conducive to the Health. That and the Hummums, (Sweating) being the chief of their Physick.

The *Christians* also anciently were more fond of their Use, dedicating Wells to entice People to their Good,

Good, the Reputation they gained for Bodily Cures increasing a religious Reverence. Baptisteries, are those ancient Baths, and retain the Name among Catholicks, because applied to the same Use; Immersion in Baptism having succeeded to the gentle Purifications, and was formerly used in *England*; until the Reformation becoming more and more established, abrogated the salutary with other superstitious Customs.

Dr. *Floyer* in his Treatise on this Subject, thinks it still recommended by the Canon. It probably kept off some Hereditary Diseases, (at least in part) that with the Neglect became first known among us; Rickets, Rheumatisms, Pleurisy, and some others, being scarcely heard of 'till King *Henry* the Seventh's Time. St. *Augustine*, mentions many Cures by common Bathing.

The Coolness of running or standing Waters in Summer are sometimes to be preferred to the Extremes, if Men have a tolerable Degree of Strength. Hot things are more adapt to Nature in hot Climates, Tobacco, Spice, Aromaticks; Compounds for eating and drinking, with warm Baths, are all used to better Purpose or with less Hurt, in the Soil they are Natives than here. Contrarily cold Countries look for a cold Regimen, suitable to the State of the Ambient Air; for keeping the Pores open here, by very warm Clothing, needless beyond what Constitution or Prudence requires; subjects to Defluxions and intermitting Fevers, as shutting them in hot Countries, (*i. e.* disregarding the Stop to Perspiration the cooler Evenings make) and Constricting the Pores, will induce continual Fevers, and Fluxes of Caution in respect to our Deportment, when fated to alter our Climate.

Warmth and Temperature better fits Bathing for the Cure of cutaneous Diseases, removing Stone and Gripes in Children, by provoking Urine and expelling a sharp black Fæces from the Intestines, relieving Inflammations in their Mouths, or about the Ears; in Adults Weakness, and Contraction of the Limbs.

The cooler Baths, are reckoned better for restoring the Weakness of Childrens Limbs when Ricketty, or feeble through careless Nursing and Attendance. Their Deafness, Hernia, Coughs, Convulsions, varicose Tumors,
 Z 4 and

MINERAL SPRINGS.

and Ulcers; for these depending in their Cause on salt sharp Humours, a Siziness or Grumosity of the Blood, are by this means evacuated; or restored to a Fluidity and Sweetness, and the Laxity of the solids braced. There is only this Caution in respect to Children, that a cold Immersion be used, either so very young that the Child is unapprehensive of what is doing; or not till six Years of Age, when I think the Remedy may be recommended so, as to agree with their own Judgment, at least not terrify so much, which sometimes by frightening their tender Years, has given Birth instead of Cure to Convulsions. The contracting Power of these, (when we make the Bath our selves,) may be improved with a Mixture of Vitriol, Nitre, or Acids; the Temperature of the other, with Sulphur, Bitumen, or common Salt.

In Adults they will remove fixed or Inflammatory Pains. Dr. Baynard says, there can be no better way to prevent Epidemical Fevers, then by a Cold Bath, which will harden the Skin against Changes of Weather, and strengthen the Stomach. They invigorate the whole and restore fading Juvedility.

“ Cold Bathing has this Good alone,
 “ It spurs Old John, to hug Old Joan; }
 And of the Matrimonial Two, makes One.

He condemns a hot Regimen in the Asthma; advises the Patient to shave often, wash the Head, drink cold Water in a Morning, and use the Bath once a Fortnight. Instances a particular Weakness of the Muscles of the Head, a *Distortion* of the *Vertebra*, so great, that unless continually supported it fell on the Shoulder; cured by cold Bathing; and in Sprains or Wrenches to be excellent, knowing a Gentleman that went slip-shoe'd a Year and a Half for a Sprain; cured by a Mixture of Verjuice and cold Water, used three or four Times a Day.

The Fluidity and Coldness of Water are two chief Properties, whereby it effects such good Ends; the sudden Cold and Surprise in Immersions, gives a very sensible and general Contraction to the Fibres, which thus strengthened

ned and lessened in their Capacities, help forward the Heat and Circulation of the Blood, consequently add Strength; for as this depends on the Quantity of Blood, according to the new Theory of *Cheyne*, it is the same Thing whether that be augmented, or the Dimensions of these straitned in a certain Proportion.

An increased Quantity of Blood, Heat and Circulation, the Effect of cold Bathing, does by a greater *Impetus*, and oftner repeating the Succussions at the Bowels, force open their Obstructions, and with the Chill upon the Solids, quickening their Vibrations, forces Urine, and therefore good in Retention and Suppression; in beginning Jaundices and Dropsies, obstinate Pains, sprain'd Joints, œdematous and viscous Tumors, dissolving the obstructed Matter, and strengthening the nervous Fibres and Parts against the Ingress of more. It must quicken the Secretions, and the Elaboration of appropriate Fluids, by bringing greater Quantities of Blood to the Organs in a lesser Time; multiply the Animal Spirits by the same Rule, and therefore proper as has been said already in Frigidity, Tremors, &c.

The Pressure of Water in Bathing, made so efficacious by Mathematical Physicians, to me is not so obvious. The Weight of Air, says Dr. *Wainewright*, in his Pneumatical Recitations, is every Foot square pressed on by a Weight, equal to 35 Foot Height of Water; which at 76 Pound *Troy Weight*, a square Foot is equal to 2260 Pounds; and that multiplied by 15, (the whole Superficies supposed of a Man's Skin) is above thirteen Tun, or 39900 Pounds, when the Barometer is at the Height. And that altering three Inches, the Difference between the greatest and least Pressure of the Air upon our Bodies, will be equal to 3982 Pounds *Troy*, near a Tun and a half, whence he thinks it is so far from a Wonder, that we sometimes suffer in our Healths by a Change of Weather; that it is surprising, says he, such Change, does not entirely break the Frame of our Body to-pieces.

In Bathing, Water being 800 Times heavier than Air, the Pressure our Body would sustain were they sunk 35 Foot, would be double to that in the Air, and in a lesser Proportion towards the Surface. Supposing therefore

fore a Bather two Foot under Water, taking the whole Area of his Skin together, he will be pressed upon more than in Air, by a Weight of 2280 Pounds; a Force that will make the Water enter our Bodies by the Pores, and mix with the Blood; which he endeavours to prove by a like extraordinary Method: *viz.*

The Matter of insensible Perspiration is *demonstrated* by Dr. *Pitcairne*, to be $\frac{1}{1200}$ Part of the Place it comes from in a Minute: $\frac{1}{1200}$ Part of the Skin perspiring, $\frac{1}{1200}$ Part of perspirable Matter, and the whole of perspirable Matter being computed $\frac{5}{8}$ of our Meat and Drink in twenty four Hours; then the perspiring Matter, through a square Inch of Skin, to hinder the Water's Entrance, must resist a Weight 115,200 Times greater than itself; and this, if all the perspirable Matter evacuated in a Minute, was to exert against it with every Pulsation, but it does not; therefore, supposing an Hour divided only into 60 Pulsations or Intermissions; to resist such incumbent Water, it must raise a Weight 6,912,000 Times greater than itself: A preposterous Supposition, mentioned only to expose the Fallacy of Mathematical *Demonstration* (as called) in Physick, which if so much against the Evidence of Sense here, how erroneous must they be upon internal Operations of Elaborating and Secreting? Half the polite Gentlemen in *England* can difficultly move under a Brocade Suit, and what must it be in getting to a Tavern or a Play? Granting the Pressure *Undiquaque*, which Mr. *Wainwright* omits, and thence the Mistake; yet still there would be Danger of noble Constitutions attending at any great Fires with their Countenance, lest the Rarefaction on one Side should increase the Pressure of the other, and thrust them in.

That the Air is weighty, and Water weightier is certain, by several of Mr *Boyle's* Experiments; who found Vials to a certain Strength, breaking in a hundred Pieces upon an Exsuction of the Air out of his Receiver, and a Compression of the Atmosphere let down through a Pipe from the Top into the Vial; but this is detaching from the whole: A Subtraction of that Pressure in the Receiver which balanc'd the Atmosphere. Pumps or any other Suctions is by the same Rule, if the Air be drawn out, room is left for the Pressure without, to rise and fill up the

the Vacuity. In an exact Sense there is no other Gravity, neither Air nor Water in their proper Places having much Weight. Fish make as easy and quick a Cession of the Parts of Water, as do the Birds in Air; the Pressure from all Sides being equal; were it unequal they could not: Empty the Receiver in part, says Mr. Boyle, and a proportionable Difficulty follows to lift up the Stopper, which decreases as the rarify'd Air, by a Stopcock for that Purpose, is made to approach to an *Æquilibrium* with the External.

Experiment 33^d. To prove the Gravity and Weight of the Air equally proves it upwards, or that the Elasticity is equal to all incumbent, which is the same Thing. Twenty eight Pound Weight, drew the Manubrium and Sucker of their Pump down, when the Air pressed at the Top of the Cylinder. Impelling the Sucker up again, and then close stopping that Orifice, there was required no less than one hundred twenty eight Pound more to force it down. And taking off a few Pounds, the Elasticity or Pressure of the Air upwards, surmounted the Difficulties, and admirably impelled the Sucker to the Top of the Cylinder, with above a hundred Weight hanging.

Experiment 29th. Shews that as much Air as will go into a 3iv Vial, is a Balance to the whole Atmosphere. The Barometer is much the same, the receiving Part corked or uncorked, in a Room, or out in the Air, does not alter the Mercury's Elevation; Mr. Boyle ascribes the Heights to the *Æquilibrium*, that Cylinder has with the Cylinder of Air supposed to reach from the adjacent Quicksilver to the Top of the Atmosphere, but may as well be ascribed to the elastick airy Particles contained in the Quicksilver; that and the Thermometer rising highest in the greatest Droughts, which is evidently from the Rarefaction without making room for these springy Particles within to extend themselves, *i. e.* rises the Quicksilver and Spirit higher. The Air's Weight upwards as well as downwards, or Elasticity, are therefore so divinely jumbled as to be near an Equality, if not the same thing, and makes us walk about so easily to Places we love. They act in respect to one another as Pressure and Attraction in Suction; if you do not draw the Sucker the Pref-

Pressure signifies nothing. Air, unless when in Motion, presses on us easier than the softest Locks of Down, and puts me in no Pain for being squeezed to Death, let the Mercury rise as high as it will.

Water, by laving on us in bathing, and being heavier and resistable, has consequently more Pressure than in Air, helping on the Purposes of dissolving viscous Humours, rendering them more Fluid and apt for Circulation; removing Obstructions in the Bowels and Distempers dependant, but vastly short of the Force *Wainwright* assigns. *First*, Because Water by that Calculation, might pour in so fast by the Body being inspirable, as in a little Time to drown a Swimmer by the Pores. *Secondly*, Should he dive deep, he would hazard by the increasing Pressure to be crushed to Death: Whereas a Man rises easier than he sinks, not only on Account of his specific Lightness in respect to Water, but the Elasticity therein.

Experiment 20th. Each Part and Particle being in its Place, were it otherwise, there must be more Strength and Violence used, either to dive or to come up again; and drowned could never sink, Bodies specifically lighter swimming. What is strange, Salt Water which is heavier than fresh, a cubical Foot of this weighing Seventy, and that Seventy three Pound; instead of pressing harder, makes Men more easy and buoyant in swimming. Ships will float nigh a Foot higher at Sea than in Rivers, the Dead Sea by its extreme Saltness bears up the Body with uncommon Force. (*Maundrel's Travels*.) So that the Advantages of Bathing in the Sea for Bites of mad Dogs, Melancholy, and the like, cannot be from a greater Pressure. *Thirdly*, Men grow thirsty with Bathing, telling us the expirable Faculty can, and does resist the Admission of Water by the Pores; which when salt, would neither be so wholesome or agreeable to take in.

This irresistible Inclination of Fluids (by the Way) to come to their Places, and restore an *Æquilibrium*, makes it impossible there should be any such Thing in the World as a Vortex or Whirlpool: The greater Heaviness of this Fluid drives to fill up, and is as Abhorrent of a Chasm, as the Air of a Vacuum: What have been
called

called so by Travellers, being no more than Eddies of Tides.

Bathing in the Sea, has of late Years grown very much into Fashion at *Scarborough* by both Sexes, as a pleasant and a medicinal Exercise. The Men have a fine long Sand from the Spaw-House towards the Cape, where they can retire and undress far enough from the Company. The Women have Guides, Rooms, and Conveniencies for it, under the Cliff at the Town, where according to the Time of the Day, they make the Sea a temperate or a cold Bath; and has this Advantage from Motion: And the Repercussions of our Strokes of giving it a greater Pressure.

The Rule is entering only two or three Times a Week: If as a cold Bath in the Morning, dipping once or twice and out again: If as a temperate One, in Summer Afternoons, tarrying no longer than can be borne untired and with Pleasure, an immoderate or irregular Use makes pale and bloated, and does not answer so well with its contracting Power. *Secondly*, Not to continue long Bathing, the contracting Power so beneficial in many Cases, will then be lost in its relaxing Property, and give those Cramps often, which physically used it cures. *Thirdly*, It must be always observed in cold Bathing, that Patients are not too far advanced in Years. Their Constitution and Viscera too much worn or decay'd, for then such a universal Quickening the Vibrations of the Solids, will throw a greater Quantity of Blood on the Bowels than can be admitted without danger of rupturing the Vessels; stagnating the Juices, or refrigerating and making Aguish. *Fourthly*, Shave and let the Immersion be total; it will help in a great Measure, to prevent the Headachs; some are subject too by Bathing, the Contraction of cold prepagating from the external Parts, derives a greater Quantity of Blood in Circulation upwards, where there is least Resistance; and swelling the Vessels spread upon the Meninges, excites Pain. *Baynard* here advises all to drink Water; for then, says he, you will live safe from Diseases of the Head, not have Hiccoughs, burning Heats, Thirsts, nor *Fætor* of the Mouth, common to High Living.

Both

MINERAL SPRINGS.

Both Sorts, by opening the Pores to promote Perspiration, help to remove the Foundation, on which the common Complaints of Mankind, (wandering Pains and Aches, Heaviness and Debility of any Sort) do ordinarily depend: That Discharge is allowed above double to all other Excretions together, and a little Suppression turns immediately to our Disadvantage.





PHYSICAL
OBSERVATIONS
ON THE
Coast of GUINEY.

IN the Ships *Swallow* and *Weymouth*, stationed above twelve Months at *Guiney*, I digested the following Observations.

The whole Coast is for the most Part, low, woody, and straight—The Soundings upon it a Mile or two from Shore (the Track of our Ships) are 20 Fathom and upwards.—The Ground very tuff, which makes Ships come *To* for Trade, with a small Bower to the Stream Anchor for a safe recovering it again.—A rough and dangerous Surf throughout. Currents instead of Tides, from the Coast being streight, without Gulphs or Bays, and generally to the Eastward.--- *Lastly*, The Horizon is always hazey; a Circumstance observed by *Dampier*, on the Eastern Side of *America* to 20 Degrees of Latitude, and by *Perry* of the *Caspian* Shores.

If it be lawful to investigate the final Cause of such Obstacles as above to Navigation; one would think they had been set as a Guard to the Inability and Ignorance of the Natives, to protect them from the Cheat, Insult, and Slavery of Trading Nations. There appears something like this Providential Provision, to all Continents; that as Rivers, Mountains, and Languages, naturally divides, and adds some Security to States and Kingdoms,

Some natural Reason against too large Foreign Commerce.

doms from one another's Oppression ; persuading each to be content with their Homes ; so in respect to others at farther Distance in their Lives and Manners, consequently less respectful, they are divided by large dangerous and tempestuous Seas. Yet,

*Nequicquam Deus abscidit
Prudens Oceano dissociabili
Terras, si tamen impiæ
Non tangenda rates transiliunt Vada.*

Each Country's peculiar Difficulties, gives farther Countenance ; *India* has its Monsoons, a long and starving Passage ; *Africa* few or no Harbours, an impassable Beach, &c. *Europe* rough and dangerous Seas, inclement Skies, or narrow Channels, Rocks, Sands, and Tides ; *Baltick* and *Northern* Seas, a long Season of the Year unnavigable ; *America* has for the Middle Parts a Leward Wind ; *Georgia* and *Carolina*, unpassable within two Leagues of the Coast, unless in the Channels of difficult Pilotage. Farther Northward to *Newfoundland*, the *N. Westers* storm like Thunder at your Approach, and with perpetual Fogs blind the Way,

*Tending to the Atlantic Ocean's Bed,
Tempestuous Carus rears his dreadful Head,
The obedient Deep his potent Breath controuls,
And Mountains high the foamy Flood he rolls.
He our Approach encountring fierce defies,
And bids Forbiddance with inclement Skies.*

There are many more such *Rubs* out of my Knowledge, but coming to Ear every Day, and how they were punished that durst invade them.

The Coast of *Guiney* lying so near the *Æquator*, must of course be very hot ; but there are two Advantages met with there, which are a Sort of Counterpoize to the Sun's Vicinity, and makes it less troublesome or hurtful, than one would expect, viz. First, *The Breezes from Land or Sea, that constantly fan upon us*, (Calms being rare, and of short Continuance ;) and, Secondly, *The Thickness of the Air*, the Horizon being always hazey, which, by obstructing the Rays of the Sun, Morning and Evening, subtract

abstract considerably from the Time he is in that Hemisphere; and although he comes vertical, Clouds do at most Seasons interpose at his different Altitudes, and break off the Brightness of his Beams, particularly at what we call the Rainy Seasons, (Seasons which revolve with the Sun all down the Coast, and have their constant Returns in the different Parts of it,) making the *Æquinoctial* cooler for the Time, than *England in March*.

This Moisture and Density of the Air, so visible in the Mist and Haziness of the Horizon, is such, as to moulder Cloaths, and rust your Pocket-Instruments, Swords, or any kind of Steel Implements, in a Day's Time; no Country being more noted for this Particular, nor more deservedly: Nay, the same Elevation of Voice, is less distinct and clear, than in any other Country I know: The Reason of this Mistiness perhaps may be the Lowness of the Lands, and the Multitude of Woods and Trees upon them, with some great, but many small Rivers washing through them, which supply these aqueous Vapours, and make the Medium thick: And this seems evident, because, as you move from Shore a few Leagues, this Haziness is lost, as all Ships experience; and also because no Dews fall (at least it is extremely rare) a League from Shore, any where along the whole Coast, yet are very great every where at Land. It is for this Reason, and because the Country is overspread with Woods and Mangroves, not only obstructing the Course of the Winds, and rendering it far more sultry and hot, but stinking and offensive; and also, because the Seamen do greedily purchase any thing to eat or drink, that is the Produce of the Country, without regard to the Wholesomeness or Alteration of their Way of Diet; on both which Respects due Caution ought to be had; that the Shores become in general more pernicious to the Healths of *Europeans*, than the Sea, where those Inconveniencies are better avoided.

Certainly nothing contributes more to the Conservation of Health, than breathing in a wholesome Air, and feeding in one regular and uniform Manner: These are the necessary Materials of our Subsistence, and with which we maintain a constant Commerce; Errors, therefore, herein will, in a shorter or longer Space of Time, as our Constitution is more or less fitted to resist, shew themselves in various Distempers: And although, we may

A a

shun

*The Air
dense and
moist.*

shun the Stench and Noisomeness *on Shore*, arising from their piquant and unwholsome Way of Feeding, we may yet create to ourselves the same or like Errors *on Board*.

The general Cause of Sickness among Sailors abroad.

The Air is very much confined between the Decks of a Ship; the Ports that would carry off the bad, and bring us fresh Air, being obliged for Safety to be shut, and great Numbers of Men to lodge there, Seamen and Slaves: The *Effluvia's* from Perspiration, and their Breathing together, will load the Air with corrupting Particles, and, as it fills with such Heat, weakens its Spring and Elasticity; and by that Means renders it unfit for receiving again: Add to this the Filth and Nastiness bred from a Number, the Steams arising thence putrefy the Air, with which they so constantly correspond; all these together, in Time shew their Effects. From what does Plague and Pestilence, epidemical and contagious Distempers, proceed, but chiefly from a Disregard in this Particular? they reigning, or at least arising first in populous Cities, and in *Summer-Time*, when Stink and Putrefaction most abounds.

This Observation should teach us Lessons of Cleanliness, to wash the Ship often with Vinegar, to keep the Men clean and shifted, no great Difficulty, where there is Warmth and Water enough, restrained from Drunkenness where Temptations present, and to let them have as free and frequent Communication with the fresh Air, (by opening the Ports, as may be consistent with Safety, and their other Affairs, Points too much overlooked and disregarded, though of the greatest Consequence to preserve a Ship's Company on a Voyage.

As stagnant Air unwholsome.

Another Remark may be drawn from this general Doctrine against the superstitious Humours or Conceit-ness of some Men, who will be as solicitous in these excessive hot Countries, of guarding against Cold, as if it were in the same Climate with *Norway*; and upon any Indisposition, presently seclude themselves from the Benefit of fresh Air, keeping their Cabins so close, as if they feared a Communication with it of the utmost Danger*; a Circumstance that the soundest Constitution cannot

* Boyle's Experiments tell us, Birds die at eight Minutes on Exsuction of the Air out of a Receiver---A Mouse in twelve Hours without Pumping---and what is remarkable in all these Experiments, they died convulsive.

cannot abide long, without Languors and great Uneasiness: And the Reason seems plain, from the Observation above; there is only this Difference; One Man here, in a confined and close Apartment, gives the same ill Disposition to the Air, in a longer Time, as I have said Numbers do (though a little more at large) in the Body of the Ship; for those corrupting *Effluvia*s that continually pass from him by Breathing and Perspiration, must at length load the stagnant Air in the Cabin with noxious *Miasms*, unfit to be received again; and I have more than once seen the Proof of this, in such, who obstinately persisting in a Refusal of what would have been their greatest Benefit (*fresh Air*,) have passed off in languishing and perpetual Sweats.

Another unhappy Effect I fear of this too great Warmth and ill Management in hot Countries, is that great *endemic* Distemper, called *Dry Gripes*, or *Colica Pictonum*, and its Paralytic Consequences. *So is too great Delicacy and Caution.*

Those, who I have known thus tormented, have been first very much weakened and dispirited by the silly Practice of promoting large and partial Sweats; whereby Cold is more prevalent in the Evenings, to the Constipation of the Pores, and sooner excites Disorders in the lower Belly, than elsewhere, because Parts not accustomed to be exposed; I rather impute it to this, than any pernicious Quality in the Air, or of strong Drinks and Acids swallowed, because any peculiar Unwholsomeness in the former, would make the Mischief more general; nor does excessive Drinking, or Acids seem likely, either of Rum or Limes, because these are of universal Use with Seamen, in all Climates, without such Effect. At *Surat* our Voyages, say they use *Assafætida* in their Dishes as a Preservative. With our own Countrymen when they come Home, Warmth, Exercise, and using the *Bath* Waters inwardly and outwardly, have been found most effectual.

But to return: There is still a farther Inconvenience attends *Heat* and *Moisture*, in such warm Countries as *Guiney* and the *West-Indies*, and contributes to the Sickness of a Ship's Company, and that is, their being productive of infinite Numbers of Insects, (*ab his oriuntur cuncta duobus*,) Ants especially who raise Hills in *Africa* to eight or ten Foot high, Garisons that will devour a dead *Too great Heat or Moisture in Climates.*

dead Sheep in a Night's Time: Of these we get Variety, and numberless Commonwealths on Board with our Woods, as also Cockroaches, Maggots, and Flies of various Species.

I shall not pretend any of these to be the malignant Species that blight and destroy Plants, or effect Murrain in Cattle, or Plague among Men, according to Dr. Bradley; but this I may be confident in, that by nesting themselves in infinite Numbers among dry Provisions, they prey on the Heart and Substance of it, and so make them less Salutory and fit for Nutriment. Salt and Heat does the same by wet Provisions; especially *Irish* Meat most used in the *West Indies*, being half eat up as we call it, with Salt, in a few Months after landing there, giving room to Complaints and Sickness.

The Sickness of our Men accounted for in particular.

Having premised thus much, I come to account for the Sickness and Mortality of our Ship's Company at the Island of *Princes*, July 1722, where we arrived to clean and refit, all in good Health, although we had been full four Months on the Coast of *Africa*; a corroborating Proof, that while Provisions continue good, and Seamen are prevented debauching themselves on Shore, they are in a much better way to conserve Health, than by better Entertainments abroad, they are not accustomed to.

I might here first take Notice, that the sudden Phrenzies, Convulsions, and colliquative Sweats, that so soon terminated some of their Lives, was suspected, and with some Reason, to proceed from eating wild *Manyocoes* and *Yamm* Roots, the Growth of the Island; which, when cultivated, and duly prepared, are a common Food of the Natives, but otherways, highly noxious and unwholesome: This might be farther insisted on, but as the Majority plainly became infected from more explicable Causes, I shall endeavour to point them out, the Symptoms attending, and my Method of Proceeding.

Of the Causes.

First, The Condition of Careening Ships at this Island makes it unsuitable to *English* Constitutions, for we are put under a Necessity of building Tents, and employing half our Men on Shore, for their Security, and for the Work that is wanted at them; whereby they are more at their own Wills and Disposals, than (without such a Necessity) it is proper they should ever be trusted with; being ungovernable in their Actions and Appetites, pilfering

fering from the Negroes, debauching their Wives, and *Debauching* excepting a very few, most irregular in their Way of *ry and Ir-* Living, or their ill Behaviour towards those from whom *regularity.* they receive it, which is apt to stir up Anger and private Revenge; they have no other Weapon against *Europeans*, and perhaps may think it their Duty when injured. Revenge may be the properest Measure to reclaim an Evil-Doer; and if Men can so govern the Passion as not to exceed Justice, which may be sometimes without Sin to Fourfold or more, he chuses the fuitablest Method to bring an Offender to the Sense of his Guilt, and prevents himself and Friends from sharing more.

Another Cause, is the extraordinary Heat of the Sun, *Excessive* (now in the Zenith, more stifling and troublesome,) *Heat.* which the Men are forced to work in, and for a longer Time every Day, on such Occasions as *Cleaning*: These Heats nigh, or on the Shore at the Tents, vastly surpass those at Sea, not only on Account of the Earth's stronger Reflection, but also from surrounding Woods and Hills, that stops the Access of Winds and refreshing Breezes.

They are still more offensive, in that the Setting Suns *Evening* are succeeded with a Chilliness in the Air, filled with *Mists.* aqueous Vapours, which, condensing very fast by the Interruption the Hills give to their Motion, fall every Evening at the Shore, in cold and prodigious Dews, sufficient in a few Hours to wet all the Beds through a double Tent. This Alternation and Fatality of Extremes, our Troops at *Carthagera*, in the *West-Indies*, have lately experienced; laying three Nights after landing, upon their Arms, without Tents to screen off the Sun by Day, or Dews by Night.

Lastly, these alternate Heats and Dews are more hurtful to Seamen, from their Irregularities of Life: Every *And In-* Day's Labour must be recruited: And this they do with *toxications.* Palm-Wines, plentiful on this Island and the whole Coast, although a natural Distillation from the Tree does without fermenting,* become intoxicating, in large Quantities. And what is worse, they frequently lay down in these Inebriations, exposed to the Chills and Dews of

A a 3

the

* Others say Palm Wines, and all Liquors, before they gain a Spirit, must have some preceeding Fermentation. Here it is of few Hours, and little Despumation. Farther North 'tis slower, and with more.

the Night, whence a sudden Check is given to Perspiration, at a Time it is most wanted, and consequently Fevers, more or less malignant, are brought on as their preceding Conduct has made those other afore-mentioned co-operating Causes, more or less powerful.

The Symptoms.

Secondly, Of the Symptoms. The Fever generally begun with a violent Pain and Dizziness of the Head, Nausea, Vomiting, and Restlessness. After the first Day, the Patient, that was dry and scorching, falls into excessive Sweats; the Consequence of which was Faintness, and sudden Prostration of Strength, an inextinguishable Thirst, and involuntary Urining, the Pulse neither high nor quick, but altering on light Occasions. In the Progress came on either Delirium, Convulsions, and Speechlessness, or sometimes a Lethargy; under the former they commonly expired at four or five Days End, with the latter, survived a Day or two longer.

A few Exceptions may be made to this general Rule, of some who languished fourteen or more Days, but then it was not the malignant epidemical Fever, but intermitting, and occasioned, as I hinted before, from a superstitious Humour of knowing better than ordinary, how to avoid the Evils of a hot Country: Some of these affected Gentlemen, I have seen faint, rather than take a Glass to inflame their Blood; and wear Flannel, and two or three Coats, to resist the Coldness of the Air, that to me, seemed more like the Steam of a hot Oven; yet such kept their Senses entire, and I may truly say of them, when they died, that they were dissolved.

Filth and Stench spreads Illness.

The Nastiness necessarily bred from a great Number of Sick, in a Ship seldom washed or cleaned, help'd to spread the Infection and Danger, aggravating the Symptoms; and at length, in a manner, disabled us from carrying on the Work required to equip us for the Sea again; where, in my Opinion, from what we had already experienced before our coming here, rested our best Hopes of Recovery. The present Comfort we had of regaining such a Condition, was the salubrious and healthful State of the Islanders at this Time, who by Temperance, (natural to all the *Seignior* Countries) keep

keep off many Evils, and is the best Physick for all Climates.

Thirdly, My Method of Proceeding, as it respected the Healthy and the Sick, Prevention or Recovery. *The Method of Proceeding.*

To preserve those who yet continued in Health, we separated the Ship entirely to their Use, and moved the Sick on Shore to the best Houses and Conveniences that could be hired, washed the Decks every Day, did not suffer them to work in the Heat of the Sun; (excessive under the Hills, from ten to four in the Afternoon,) nor to lay at the Tents, avoiding by that the Opportunities of Irregularity, and the Dampness and Dews they became exposed to afterwards.

The Sick had yet this Unhappiness, that having destroyed their Healths at the Cost of all they had, their Cloaths, which they had bartered for Drink and Eatables among the Negro Servants, were now destitute, having neither Bedding left, nor so much as a Shirt to cover Shame, empty Hammocks being their Lodging, and the Roof their Covering; a Misfortune that would, in my humble Opinion, become the Wisdom of the Admiralty to provide against, by a Choice of Officers that should have Instructions and contingent Money for this Purpose. The Commanders of French Ships of War, I am told, have always such an advance on Foreign Service, and by that the Means of Necessaries and fresh Provisions lodged with them for the Sick wherever they come; which seems of absolute Necessity in remote Parts, to administer that Comfort which the Poverty and Obedience Sailors are under, disables them from doing to themselves: This dispensed frugally would be of considerable Charge to a Government, and with Strangers exemplify a Christian Concern for our Brethren: and what may be a better Motive; Aldermen and Lord-Mayors can have no Estates without them.

I begun the Cure with Emeticks, as the best Foundation, I thought, in Fevers from Intemperance; and found them so far good, as to procure a little transient Ease and Rest, and so seemingly better for it the following Day; yet at Night Fever and Head-ach would return with greater Violence, and break off in some lucid Interval again in the Mornings, at which Seasons of Remission, (chiefly) we bled them in the Foot three or

four Times, perhaps in eight and forty Hours, according to the Humour and Practice of the *Portuguese*, who, as they presume themselves best Judges in the Country Distemper, build their Cure entirely on it, and repeat it much oftner.

I imagined after this Operation, *Tinct. Serpent.* as an Alexipharmick and Sudorifick both, would best answer to these Symptoms, by expelling in the Way, to which Nature seemed to have its Tendency.

℞ *Tinct. Serpentar.* ʒij. *Aq. Cinnam. H.* ʒj. *F. Haustus.* Or,
℞ *Lap. Cont. Yerv.* gr. xiv. *Cons. Cynosb. q. s. F. Bolus.*

But was mistaken : As they immediately lost all Appetite, those large and perpetual Discharges by the Pores emptied the Vessels, and hurried on extreme Languors, Faintness, and Convulsions, dying in three Days, *quæcunq; Inanitionem nimiam producunt, Causas Convulsionis feri.*

With others again, I try'd Julaps, Volatile Drops, and other Cardiacks.

℞ *Vin. Alb. Aq. Fent. a.* ʒiv. *Aq. Cinnam. Fort. Sacchar. Albiss. q. s.*
℞ *Spt. Sal. Vol.* ʒj. *Lavendul.* ʒij. *Ol. Caryophil. g. x. hujus instilletur.* gr. xv. *in Aq. Hord. vel in Cochlear. Julap. sequent. bis in die.*

℞ *Aq. Hord.* ʒviii. *Tinct. Croci Aq. Epidem. a.* ʒj. *Margaret.* ʒj. *Sacchar. Albiss. q. s.* To the Soles of the Feet, applied *Burgundy Pitch*, or *Cephalick Plaister* spread on Leather ; embrocating them and the Palms with some *Liniment embued with Tinct. of Castor*, or *Oil of Amber.* To the Belly, perhaps, a *Plaister of Galbanum*, with *Oil of Mace.*

When the Patient was found approaching either to a Delirium or Sleepiness, one or other of these Symptoms certainly ensuing, then these Prescriptions were accompanied with Blisters both to the Arms and Legs.

I try'd others with testaceous Powders, or the Cortex, and a strong Hartshorn Drink, in hopes to tie up so loose a Texture and Compages of the Blood, and prevent the Expence of Spirits in such copious Sweats: But all equally unsuccessful; few survived the Infection above six Days; the excessive Heat of the Climate, and an inextinguishable Thirst to such a predisposed Disposition of the Blood, quickly evaporating both Strength and Spirits: The last Symptom, and sure Fore-runner of Death, was in most of them Convulsions.

This unhappy Sickness and Mortality had very nigh reduced the Ships to a Necessity of waiting a Supply of Men from *England*; but as such a Resignation seemed a melancholy Remedy in so remote Parts, I rather advised the pushing to Sea, for Change of Air and Way of Living.

We soon found an Advantage by this to our well Men, the epidemical Rage lessening in Proportion to the Time of leaving those enumerated Causes of Infection, and enjoying a cooler and more salubrious Air.

For those few who had conquered the Severity of the Fever and were weak, we were still perplexed: As the Wine and the few Surgeon's Necessaries, provided for such Occasions, were all long ago expended, there was not only a bare Want of them to complain of, but the absolute Necessity of resorting to the Ship's Victualing, (bad in Kind) for supporting Life, and they in weak Conditions, we found, had this melancholy Consequence of inducing a feverish Heat and Thirst, and giving Birth to Fluxes; so that what the one spared, the other destroyed.

Fluxes took their Rise here from Poverty of the Blood, *Fluxes at* bad Diet, Nastiness, and an infectious Air consequent *Sea.* thereto, and necessarily bred from narrow and close Confinement.

They were distinguished into Diarrhea's and Dysentery's: *Diarrhæa alvi laxitas. Dysentery est alvi cruenta ac purulenta, Dejectio a materia acri Intestina rodenti.* Baglivi.

The Intentions of Cure seem common, viz. To embue the Blood with Restoratives; to allay the painful Sense of the nervous Fibres with Opiates; and to shut
the

the Mouths of the Vessels, or heal their Erosions with Stypticks and Astringents.

Evacuations always precede, not as they so immediately answer to either of these Intentions, as that they fit the Body for receiving Advantages by Opiates and Astringents.

For an Emetick, *℞ Pul. Ipecacuan. ʒj. ad ʒss. cum Oxymell. Scillitic. q. s. F. bolus.*

A Purge, *℞ Pul. Subtiliss. Rhabarb. ʒij. in Forma Boli vel in haustul. sumend. ad tres dosibus.*

After these Evacuants, I continued the first Complaints to Dr. Moreton's Electuary, (Examiner of our Journals) in the Dose and Manner directed, and found some Success: That expended, I kept others to Dr. Cockburn's, and found it did no Harm: Both finished, I made up as follows:

℞ Terræ Sigillat. Bol. Armen. ʒj. Cort. Granat. Flor. balaustior. a. ʒj. Conf. Rosar. ʒiv. Tereb. q. s. F. Elect. sumend. quantitat. nucis quarta quaq; Hora superbib. Haust. Decoct. Alb.

With others, a Bolus of *Diascordium* alone every Night, or a small Pill of *Laudanum* rolled into a Dose of Electuary. Their ordinary Drink of Harts-Horn.

℞ CCC. ʒiv. Cinnamon. contus. G. Arabic. a. ʒij. Cort. Granator. & Querci a. ʒj. Aq. Font. ℔vj. Coq. ad tertiæ partis Consumptionem.

In those Dysenterical, I breathed also a Vein now and then, and administered *Calomel*, finishing with the following, which I recommend as a Medicine of no small Efficacy.

℞ Elect. Fracastor. ʒj. Alum. Commun. gr. iij. Laud. liq. gutt. xv. Mane & Vesperi sumend.

From

From the Process, though not attended at this particular Season with much Success, may be deduced a useful Observation or two.

First, That where the Causes producing Fluxes irretrievably subsist, (the Case of Ships in foreign warm Climates,) there is little Hopes of Success; want of Diet, and a bad Air, are too great Impediments for Medicines to contend with, and render ineffectual the best Prescriptions. The eroding Particles, where we have no healing Nutriment, acquire greater Strength, and the Flux becomes habitual, admitting then only Palliatives, (*i. e.* Opiates,) which give Respite, indeed, but of little Consolation.

Secondly, Astringent Electuaries have their Efficacy from the Quantity of Opium administered in them; and those recoverable, soon find its Effect after Evacuations; if not, they lose of their Virtue, by the Frequency of Repetitions, the Stomach palls and nauseates, and then of Course the Patient proportionably emaciates till Death.

And, *lastly*, from experienced Want, I would recommend a triple Quantity of some Medicines usually put up for Foreign Sea-Service, *viz.*

The *Cortex, Rad. Ipecacuan. & Rhabarb, Opiates, Aq. Cinnam. F. CCC. Ther. Venet. Elect. Fracastor.* or other *Antidysenterick Electuaries*; Practice in a manner being confined to them, and no Hospitals to lessen the Expence.

I shall conclude with some Notes on the Distempers of the Natives of *Africa*.

The Negroes are a People troubled with few of the acute or chronic Distempers of the *Europeans*, owing principally, I think, to a happy Want and Ignorance of luxurious Living; feeding for the most Part on Grain, Herbs, Roots, and Fruits, bathing sometimes, and all constantly anointing with Palm-Oil, or Tallow; which only as it is an Exercise, does, with a little Fishing, Travelling, and Dancing, their chief Amusements, expel easily the Recrements of such Food, and contributes to the better Health and Longevity of the Coast-Negroes; which we must distinguish as abundantly more sprightly and active than the Inland Natives, (*chiefly* meant here, because of them, the Bulk of Cargoes consist:)

The Negroe Distempers.

sist:) They have been totally destitute of this *European* Correspondence that has mended the others, and are to Appearance but a few Degrees in Knowledge above Beasts, many of them to *Leeward*, imagining they are bought to fatten up for Food. The Company mark them still *D. Y. Duke of York*, to perpetuate the Ignominy of his Headship to that Trade.

From *Sesthos* River, Windward, many of the Negroes have large *Exomphalos's* through the Ignorance of Midwifry; and those of *Whydah*, where the chief Slave Trade is, are more subject to Small-Pox and sore Eyes.

Four peculiar to Negroes.

This I have thought fit to premise in general: The Distempers I design to speak of, as more properly their own, are the *Sleepy Distemper*, the *Croakra*, the *Yaws*, and the * *Chicoes*: Of each briefly.

The first, called by Europeans the Sleepy Distemper.

The Sleepy Distemper (common among the Negroes) gives no other previous Notice, than a Want of Appetite two or three Days before: Their Sleeps are sound, and Sense of Feeling very little; for pulling, drubbing, or whipping, will scarce stir up Sense and Power enough to move; and the Moment you cease beating, the Smart is forgot, and down they fall again into a State of Insensibility, driveling constantly from the Mouth, as if in a deep Salivation; breath slowly, but not unequally, nor snort.

Youth most subject to it.

Young People are more subject to it than the Old; and the Judgment generally pronounced is Death, the Prognostick seldom failing. If now and then one of them recovers, he certainly loses the little Reason he had, and turns Ideot.

In searching for the Cause of this Distemper, it will be necessary to repeat what I have above observed, That the Bulk of Slave-Cargoes consist of Country People; as distinguished from the Coasters; apparent, if the principal Way of Supply be considered. At *Whydah* more Slaves are bought, than on the whole Coast besides; and why? The King of that Country, and his next Neighbours, understand Sovereignty better than others,

* The Word us'd by the Negroes for Worms bred in any part of the Body.

others, and often make War, (as they call it) to bring in whole Villages of those more simple Creatures inland, to be sold at Market, and exchanged for the tempting Commodities of *Europe*, that they are fond and mad after.

On the rest of the Coast, there are trading Towns dispersed up and down, under the Direction of *Cabiceers* or chief Men, who, as their Power is weaker and more controlable, export fewer Slaves; and those they do, come mostly by stealing; for they go armed into the Country, and seize those defenceless Creatures, a few at a Time, and expose them to Sale to the next Merchant Ship that touches in their Road.

To return, the immediate Cause of this deadly Sleepiness in the Slaves, is evidently a Super-abundance of Phlegm or Serum, extravasated in the Brain, which obstructs the Irradiation of the Nerves; but what the procatartick Causes are, that exert to this Production, eclipsing the Light of the Senses, is not so easily assigned. *The immediate Cause.*

We find sometimes in *Europe* that Enormities in the Non-Naturals, Surfeiting and Drunkenness do gradually, as Age and Custom advance, weaken the Tone of the Brain, to the Admission of ferous and extremitious Humours, inducing Sleepiness, &c. But here the Case is different, they being young People that are generally afflicted, and who have been destitute of the Means of Surfeiting.

I shall ascribe the Cause to catching Cold, and their Immaturity; to Diet and Way of Living; and to the natural Weakness of their Brain; some or all these Causes co-operating to it. *The Procatartick Causes.*

First, In Immaturity, or Childhood, it is a common and true Observation, that more of Phlegm and recrementitious Humor is bred, than at Manhood; because the Fibres, and consequently the Faculties resulting from their Constitution, have not attained their due Spring and Perfection; and it is only supposing the *Africans* continue longer Children than the *Europeans*.

Secondly, Promoted here by their Diet and Way of Living,. At Home it is mostly on Roots, Fruits, and Herbage, greedily devouring such as are wild and uncultured;

cultured; which, together with the intolerable Heats of the Sun, weakening the concoctive Faculty, together with their Inactivity, render a very recrementitious Nutriment: Their Indolence is such, (when shipped on Board for Slaves,) as to be entirely dispassionate at parting with Wives, Children, Friends, and Country, and are scarcely touched with any other Sense or Appetite, than that of Hunger; and even in this, for want of Custom or Instinct, they cannot distinguish proper Food, nor know when to leave off, voraciously eating though Victuals be never so dirtily cook'd; and whether the Flesh be raw or dressed, whether of the Guts or a Surloin; a Practice also that may sometime by over-stretching the Fibres of the Stomach, occasion Crudity and Indigestion. By their Sloth and Idleness the Blood becomes more depauperated; and those recrementitious Humors bred from it, that Exercise would throw off through the proper secretory Organs, are here disposed towards the weakest Part, which in the Generality of Negroe Slaves I take to be the Brain.

Thirdly, The natural Weakness of the Brain, I am apt to think the principal Cause of this Distemper. Doubtless that Part gains Strength by Exercise, *i. e.* by the Employment of our rational Faculties, as well as the Muscles and external Fibres of the Body by Labour; and since the *Africans* are hereditarily ignorant, destitute of all Art and Science, or any mechanical Knowledge to exercise the Brain, it consequently grows weaker in its inward Structure and Recesses; and fails together with the Judgment and Passions.

The Imployment of the Soul does not only in Metaphor, but in Reality, help to strengthen the Brain; as that again, (the Condition of Mortality) by the Firmness of its Texture, and Goodness of Disposition, does the intellectual Faculties. This is obvious in the clear, wakeful, and unclouded Understandings of Men of Learning and Genius, compared with the Stupid and Ignorant, in whom the Soul, (*i. e.* its Operations,) and the Brain are reciprocally found strong or weak: Where Ignorance and Stupidity reign therefore, and neither Sciences nor Mechanicks are planted for exercising the Faculties, the Brain must grow weak, and
such

such a State of Thoughtlessness and Inactivity dispose it for the Reception of Serocities.

The Cure is attempted by whatever rouses the Spirits; bleeding in the Jugular, quick Purges, Sternutories, Vesicatories, *Acu-Puncture*, *Seton*, Fontanels, and sudden Plunges into the Sea; the latter is most effectual when the Distemper is new, and the Patient as yet not driveling at Mouth and Nose. *The Cure.*

The *Croakra* (so called by the Negroes) is a cutaneous Distemper, somewhat like, but not so inveterate as our Itch, being large Blotches and Blains dispersed up and down, and seem to arise on board Slave-Ships from a sudden Change to an unusual and coarse, if not a salt Diet; contributing to which perhaps, may be a Neglect and Carelessness in drying the Skin in warm Suns, after it has been wet with Salt-Water: It is true, they do not so soon feel the Effect, but Repetition in the End has its Share in helping to fret and chap the Cuticle in this Manner; at least, I imagine so, because restraining from Salt Food, using Baths, and feeding them wholly on Rice, Farine, and Beans (the common Victualling,) does, together with constant basting in of Palm-Oil, generally smooth and dry it again. Where this latter Practice obtains most (*viz.* the *Windward* Part of the Coast,) there they are the least troubled with these Eruptions; and where the Custom is more intermitted, (or salted Tallow used instead,) it becomes more frequent. *The second Distemper is the Croakra.*

In speaking to the distempered Skins of *Africans*, it falls naturally in the Way, to subjoin a Word or two of their Colour. *The Negroe Colour extremely difficult to account for.*

From the River *Senega*, in *Africa*, 15° N. to almost its Southermost Extremity, the *Hotmentotts* in 34° : The Natives are all black and woolly, the natural Cause of which very much perplexes Philosophers. *Malpighius*, and from him other Anatomists, ascribe it to the Tinge, in that reticular Substance under the Cuticle, without considering the Question as strongly returns; how that reticular Substance becomes so? The Gradations *Europeans* make towards a Mulatto Dye, seems well enough solved, from the Fineness of their Skins, and approaches to the Sun in warm Climates; whose Heat more or less eliminates the thin Parts of that Mucosity, the Remainder

mainder turning dark like the Sediment of Liquor; but how so entire and opposite a Change of white and black between us and the *Guineans*, is not so soon answered. There are these Objections;

First, That the Proximity of the Sun, has not the same Influence on other Animals; contrarily, turns the Wool of Sheep into Hair, contrary to that closer Contexture of the Skin, that in human Creatures is supposed to contribute to the Production of Wool.

Secondly, No *European* totally changes by length of Cohabitation with them, nor in Generation begett Blacks, but Mulatto and hairy; which, as they suggest, ever remain so.

Thirdly, The Palms of the Hand, and Soles of Negro's Feet, by Friction in the constant Use, and Cuticle supplied after Scalds, are whiter than other Parts of the same Skin; yet these Accidents happen without reaching that mucous Substance.

Fourthly, *Americans* or other Nations, under the same Vicinity of the Sun, are not black.

And *lastly*, in this Negro Land, I have seen in King *Pedro's* Town on the River *Sesthos*, a bright yellow Man, who was woolly, and in every respect else a Negroe, if that be no Impropriety. I have heard some Masters of Vessels in the Trade say, they have met the same at *Madagascar* and *Angola*.

To put in my Guess on this abstruse Question, I shall first observe, that the *Brasilians* differ in their Colour, both from *Spanish* and Northern Indians of *America*, one being on a Copper, the other a Walnut Colour. *East Indians* differ from these again, (on the Subfusk,) and all as distinct as black and white, which happens I imagine chiefly, on account of the Soil each is bred and nurtured in; of so much Influence in nearer Neighbourhoods than Continents, to change also the Smell and Taste of Plants, regained again by transplanting.

Men by a like Analogy, change considerably by removing, even in their own Lives, and were they to marry and abide there: They here confined each to their own Descendents, yet, *Quære*, in a few Generations, whether they would not entirely turn like the Natives? Why I think so is, That this Case must have

have already happen'd to most known Nations in the World, though gone into Oblivion; particularly in those great Transmigrations of *Goths* and *Vandals*, quite to *Africa*, who are now without any Distinction from the ancients Natives; so are the Moors in *Spain*. Ourselves are a Mixture of different Nations and *Complexions*, and 'tis the Soil has united them *English*, so as by that alone almost, to be distinguished from our nearest transmarine Neighbours.

Animals also strangely change from their Nature and Looks by transplanting, that in Dogs, Cocks, and Sheep, I have been acquainted with here, and doubtless there are many others out of the Compass of my Observation; some of which, Elephants, Parrots, Monkeys, will not propagate at all when removed, as some Species among us, I presume, would cease there; fixed to the Soil with the same Certainty Kinds in general are to the Earth; no new Species in all humane Reason, its said, having appeared from the Creation to this Day. We see, if the Ass and Mare copulate, the Generation stops at the Mule, and so would any other unnatural Mixture. This by the way may shew the mistaken Notion of such, who have supposed Monkeys to be the *By-Blows* of Humanity; they are a distinct Species and propagate, which they could not have done on such Original. If one now and then has been found approaching nearer our Similitude, censured as the Fruit of a wicked Correspondence, it must needs perish to justify the Laws of Providence; *Ye shall not sow with mingled Seed: Nor thy Cattle gender with divers Kinds; Levit. xix. 19.*

From the whole of Colours, Children partaking of White and Black, in an exact Proportion if their Parents are so, and that constant Likeness to both in unnatural Mixtures, learns us, *First*, that neither the *Ova* in Women, nor *Animalculæ* in Mens Seed, is alone the Principle, but each contributes Share alike. *Secondly*, that there is no just Pre-eminence in the Sexes, what has obtained and stands in every Country is by Custom and Authority of the Law-givers, for better Convenience and Order. *Thirdly*, That it is impossible any Females without unnatural Coition, can produce any other Fruit than their own Likeness; Turnip-

mainder turning dark like the Sediment of Liqueur; but how so entire and opposite a Change of white and black between us and the *Guineans*, is not so soon answered. There are these Objections;

First, That the Proximity of the Sun, has not the same Influence on other Animals; contrarily, turns the Wool of Sheep into Hair, contrary to that closer Contexture of the Skin, that in human Creatures is supposed to contribute to the Production of Wool.

Secondly, No *European* totally changes by length of Cohabitation with them, nor in Generation begett Blacks, but Mulatto and hairy; which, as they suggest, ever remain so.

Thirdly, The Palms of the Hand, and Soles of Negro's Feet, by Friction in the constant Use, and Cuticle supplied after Scalds, are whiter than other Parts of the same Skin; yet these Accidents happen without reaching that mucous Substance.

Fourthly, *Americans* or other Nations, under the same Vicinity of the Sun, are not black.

And *lastly*, in this Negro Land, I have seen in King *Pedro's* Town on the River *Sesthos*, a bright yellow Man, who was woolly, and in every respect else a Negroe, if that be no Impropriety. I have heard some Masters of Vessels in the Trade say, they have met the same at *Madagascar* and *Angola*.

To put in my Guess on this abstruse Question, I shall first observe, that the *Brasilians* differ in their Colour, both from *Spanish* and Northern Indians of *America*, one being on a Copper, the other a Walnut Colour. *East Indians* differ from these again, (on the Subfusk,) and all as distinct as black and white, which happens I imagine chiefly, on account of the Soil each is bred and nurtured in; of so much Influence in nearer Neighbourhoods than Continents, to change also the Smell and Taste of Plants, regained again by transplanting.

Men by a like Analogy, change considerably by removing, even in their own Lives, and were they to marry and abide there: They here confined each to their own Descendents, yet, *Quare*, in a few Generations, whether they would not entirely turn like the Natives? Why I think so is, That this Case must have

have already happen'd to most known Nations in the World, though gone into Oblivion; particularly in those great Transmigrations of *Goths* and *Vandals*, quite to *Africa*, who are now without any Distinction from the ancienter Natives; so are the Moors in *Spain*. Ourselves are a Mixture of different Nations and *Complexions*, and 'tis the Soil has united them *English*, so as by that alone almost, to be distinguished from our nearest transmarine Neighbours.

Animals also strangely change from their Nature and Looks by transplanting, that in Dogs, Cocks, and Sheep, I have been acquainted with here, and doubtless there are many others out of the Compass of my Observation; some of which, Elephants, Parrots, Monkeys, will not propagate at all when removed, as some Species among us, I presume, would cease there; fixed to the Soil with the same Certainty Kinds in general are to the Earth; no new Species in all humane Reason, its said, having appeared from the Creation to this Day. We see, if the Afs and Mare copulate, the Generation stops at the Mule, and so would any other unnatural Mixture. This by the way may shew the mistaken Notion of such, who have supposed Monkeys to be the *By-Blows* of Humanity; they are a distinct Species and propagate, which they could not have done on such Original. If one now and then has been found approaching nearer our Similitude, censured as the Fruit of a wicked Correspondence, it must needs perish to justify the Laws of Providence; *Ye shall not sow with mingled Seed: Nor thy Cattle gender with divers Kinds; Levit. xix. 19.*

From the whole of Colours, Children partaking of White and Black, in an exact Proportion if their Parents are so, and that constant Likeness to both in unnatural Mixtures, learns us, *First*, that neither the *Ova* in Women, nor *Animalculæ* in Mens Seed, is alone the Principle, but each contributes Share alike. *Secondly*, that there is no just Pre-eminence in the Sexes, what has obtained and stands in every Country is by Custom and Authority of the Law-givers, for better Convenience and Order. *Thirdly*, That it is impossible any Females without unnatural Coition, can produce any other Fruit than their own Likeness; Turnip-
B b Seed

Seed else might turn to Cabbage, and Cucumbers to Apple Trees.

The *Yaws*, is a general Name for the Venereal Distemper among Negroes here; or at the *West-Indies*, where the Sexes not being balanced, may give greater Occasion for Infection. On the Coast it is very rare among them; and in the Country, by what I could enquire, scarce ever known; Nature perhaps repays their Ignorance of Means to cure, by a stronger Love and Inclination to Continency. Their Women are naked all but the *Tomee*, and yet that Nakedness is no Temptation to Wantonness, rather subdues it; *no Thought infirm alters their Cheek*; Lust is glutted by the Sight; and when they marry with one another, its a Friendship more lasting, as not founded so much in Concupiscence.

If ever they catch this Distemper, they have, unless at the Factories, no other Trust but in the Salubrity of the Air, and spare Living, which in a great Measure they are drove to by necessitous Circumstances; yet with all this want of Doctors and Medicines, I believe none ever saw a fallen Nose there, or those raging Symptoms we experience when aggravated with unskilful Mercurial Processes. At the *West-Indies* it is otherways; I have seen very ghastly Spectacles among them, Eruptions, Buboës, Blotches, Ulcers of the Face and Head, &c.

That these People can poison to what Length of Time they please, as Mariners on those Voyages sometimes pretend to give us the Consumptive Tokens of at home. I look on a false Charge, their Knowledge extending to so few Things, such Complaints are more probably owing to their licentious Liberties among the Women Slaves, who now and then leave a Sting, that with the Help of Mercurial Poisons, from better Adepts, may revenge thus their injurious Usage. The Stories of this Kind, from hence and *India*, are like the Magick formerly made use of among ourselves; when a Sorcerer would pretend, by heating an Image of his own making before a slow Fire, and pricking with Needles, the Heart, Liver, &c. would inflame with Love, or consume with Anguish, those they practised against, though at never such a distance. Illusions, which serving to get a great deal

deal of Money in those Days, and at the same time feeding their corrupt Imaginations with the disorderly Passions of all sorts of Patients, put crafty Men on the Exercise; who we may believe as easily obtained Credit with the Multitude, as Quackeries do now in Divinity or Physick. It fell in with People's Weakness and Resentments, and seemed not unlawful, from the Numbers we read possessed in the Gospel, and Practicers among the Jews to cast them out. *By whom do your Children cast them out. Matt. xii. 27.* The Fallacy however is excuseable (like *piæ fraudæ*) if a meagre Example or two procures a greater Regularity in others.

I should descend more particularly to their Cure, did not their Similitude rank them with our Pox and Clap, of which already. I can only add, that on two Patients I had in the *West-Indies*, Mercury seemed more easily to take effect.

Chicoes or *Worms* externally breeding, is another Distemper common among them here, and at the *West-Indies*. The Philosophical Transactions have a Relation from our Factory of *Fort St. George* in *India*, of Worms breeding there in diverse Parts of the Body, and to various Lengths, some six or eight Yards. From *Persia*, we are told the same: That while breeding in some Persons, they have lain six, eight, and ten Months Lane, the Worm involved within the Skin like a Ball of Silk, sometimes losing their Limbs, and sometimes their Lives; ascribing the Cause also to drinking the Waters there.—*Knivet's Voyages*, and our own Experience, confirms their Breeding frequently in the *West-Indies*, smaller and customarily in the Toes of *Negroes* or others, when constantly exposed.

I cannot agree to what most Travellers advance, who have visited warm Climates, and mention these Worms: That they are bred from the Seed or Eggs of such Insects swallowed in drinking unwholsome stagnated Waters: Any Thing which has its Original from so cool an Element, should be sooner stifled and destroyed by the Heat of our Stomachs when taken in, or, at least, before the Circulations can be finished that lodges them at the external Parts, where they are to increase and mature.

There is not a more abstruse Subject in Physick, than this Generation of Worms in human Bodies, whether in the Stomach or Guts. In the Tongue, Gums, Nose, Brain, Bladder, Liver, Heart, Lungs, Blood, at all which Places, our Philosophical Transactions relate: Or this Sort called Chico's, in the Legs or Feet in the *West-Indies*, and other external Parts at *Africa*.

Those, who to get rid of Equivocal Generation, (a Generation without Seed or Parents,) ascribe their Birth to the Eggs of such Insects conveyed into our Bodies with the Food we eat, all Vegetables and Flesh, by means of Fly-blows, being full of them; but this seems a poor Solution. If we consider what such Eggs come too, when hatched in their properest Nests, compared with the others Shape, Length, Whiteness, or Flatness; nothing like what we can see without us; some of so strange Shape, that the *German Ephemerides* has called them Toads, Lizzards, Kittens. Dr. *Lister*, Caterpillars, *Jes-sup*, Hexapods, from the Stomach. I have seen nasty ill shaped white Worms of four or five Inches long, creeping out of the Mouth of a young Child after Vomiting. Mr. *Andry* gives an Account of a *Solium* (or Solitary Worm, as he explains it) from a Patient's Intestine of fifteen Foot three Inches long: The Largeness alone, were there no other Objection, is too great for the Smallness of the Seed; but we may also add to this, what is a certain and invariable Law of Nature, that none of those Seeds in Fruit, Grain, Plants, &c. could hatch any where but where they do. We every Day prove that Eggs of Birds which have had the Tread of the Cock, and Spawn of Fish may be swallowed; or even live Fish which I have seen Anglers do immediately, when caught, throw down their Throats, without any Danger of Breeding, though we are sure they carry the Principles and Powers of Animation with them.

The Generation therefore of all internal Worms, at least, tempts one to think, must be *ex novo*. A Principle of Animation within ourselves, some particular corruptible Food, meeting with a particular Disposition, the Colour, Shape, and Magnitude of such Worms, being chiefly owing to the Parts they breed in, and the Matter they are bred from, and with the same Causes are always of the same Sort. Those Intestinal, from crude putrefying

fyng Food, meeting with a weak Concoction, and a Deficiency of Bile, a common Circumstance of Childhood. Inanimates, if our Senses do not deceive us, will corrupt to Animation, the Principle in both being the same, a Power congenit to Matter; and why they are now enlivening, or by, and by corrupting, is solely from the Alteration of Figure and Texture in the Compound, which though destroyed in one Sort, is rising again in another for ever and ever: Established like the Foundation of the Earth.

In Chicos, there is an Appearance of Reason, (since they breed only in the exposed Parts, Legs and Feet, seldom or never in Children, nor in those clothed and covered) that they may be Seed externally conveyed from such Mens constantly walking and trampling naked in the Waters that contain them: But then here in *Africa* again, That they should be found a Foot and a Half, some say an Ell or two long; and breeding at other external Parts, never wet; is as difficult almost as the Internal to account for, without allowing this Principle of Animation in ourselves, to Nastiness properly nidulated; but doing that, there is a greater Difficulty in allowing the same Power to Vegetables, who hatch peculiar Sorts of Worms, which, as Dr. Ray observes, would be giving them a Power of producing Animals, an Order of being above themselves: Rather a Creation, and by indisposed Matter, an acting infinitely beyond their Strength.

The Part where the Worm is, gradually tumifies to the Bigness of an Egg, hard, and painful, when left to their own Management; and a Month, two or three, in suppurating, which is a little Moisture with the Eruption of the Worm, to Appearance, inanimate white and slender as a Straw, gently drawn forth an Inch or two every Day, breaking off the last as often, till all is come away, cutting upon them brings greater Pain and Indigestion. The Negroes do nothing but cover the Wound with a Bit of Linen to keep out Air and Cold, and embrocate with Palm Oil.

From the Observation of Mr. Ray above, that it's unreasonable, and a Creation for Plants to produce Animals. *Aristotle*, that an *Animalillio*, (because of Life) is a more Glorious Body than the Sun. Others, that *Being*, without Perception, is in a Manner cast away, no

good Gift, and such other Faults with the Creation, leads me to another Thought or two about the Excellency of Animation. By these Philosophers Way of Reasoning, our whole Globe that produces and sustains such Myriads of living Creatures, *All having been formed out of the Earth*, is herself inferior to the least of them. And brings forth Beings superiour to herself, the unreasonable Conceit they aim to correct. A Louse, a Flea, or a Chico, notwithstanding Life, is to me an inferior Being to a Palm or Cedar, much more the Grand Parent. Were it not so, and the Comparison odious, what prodigious Wickedness must it be, to trample on, and demolish with Contempt those, and Insects of all Sorts, larger Animals by Hecatombs and Thousands, and often for their Skins only. A Plant or a Flower is superior not to one alone; but all the Insects together they engender, in Beauty, Smell, Usefulness, and even Animation, the Vegetative being here before the Animal Life; and is intrinsically the better Choice, were Reason to appoint. Inactivity, by some eminent Philosophers, has been thought the supreme Happiness; and Activity, or the animated World, a Turn of harder Duty. Most Men, by what I can discern, esteem their Portion of Rest and Sleep, before that spent in busy Avocations for a Livelihood, attended with their common and ordinary Accidents. And in Pain of Mind or Body, every one gives it the Preference. Again, if Sleep, for temporary Reliefs, is so much and so reasonably coveted, how can our Condition be made worse in perpetual Rest or Death; especially, where the Cups are running over with Gall and Bitterness? At least, it is a very great Question, and in our own Country, even take away Heaven and a Life hereafter, which would be the better Choice for the Generality?

What favours such a Notion, is the Disproportion, what we call dead Matter, will stand in to the Active. And that the Earth in the Aggregate should be more useless and unhappy than in her distinct Divisions, to whom at the same Time she gives that Happiness she has no Taste of herself. Felicity then must be of different Sorts, though we cannot comprehend by what we are acquainted with Motion, Light, Fertility, &c. how.

There

There is one Glory of the Sun, another of the Moon, and another of the Stars: And those Glories are in something more than we see, and which human Reason cannot be able to find out. The Glory or Felicity Men talk of, is applying the Bounties around them, in such a Manner as they think best fits their own Frames, exclusive of all other Beings; and is a Vague uncertain Description, fits hardly any two Men alike, much less the Universe. Every Part of Nature is working, and some way or other tending to the Good of the Whole. A Portion of the Animal Duty, for ought we know, (by the Vicissitude of Night and Day, Rest and Action,) may be to take Turns with our Antipodes; and by trampling like Men in a Crane Wheel, contributes with the Heat of the Sun*, towards the Motion and diurnal Rotation of the Ball, the Principle on which all Life depends. A Conjecture however, that recommends active Life, and whatsoever our Hands findeth to do, to do it with Speed. He that laboureth, let him labour in the Day.

*Lest total Darknefs should by Night regain
Her old Possession, and extinguish Life.* (Milton.)

What does Health, our greatest Felicity here consist in? But the Rest and Tranquillity of every Part respectively, and when we have it, conveys in the Whole a Pleasure called Indolence, a Degree above Inactivity; to be preserved possibly were all our Limbs gone, but

B b 4

Pain

* All Bodies, Gold, Iron, Wood, &c. lengthen with Heat, and contract with Cold, seen by the Pyrometer. An Iron Balcony in the Duke of Tuscany's Palace at a Place disjoined, parts considerably in cold Weather, and comes too again in Hot. (Wright, p. 419.) An Iron Rod a Foot long made red hot, gained $\frac{1}{60}$ of its Length, &c. (Boerhaave.) The Sun then by continually beating with its warmest Rays on the Earth's largest Circle, a Breadth of 47° Ellipticates, or Lengthens as he courses along to propoundate, it may be and help the Rotation. It being Indecorous to bring God immediately to every Work which are done by natural Causes of his own Eternal Establishment. Winds and Tides have certainly their principal Cause from the Heat of the Sun, which near the Poles, are stagnating. And if of such Influence on Air and Water, Why not upon Earth?

Pain is a Reality, caused from the Parts being more alive, a quicker and fixed Consciousness of the Soul: Whether therefore it be an Immaterial Principle, a Substance of no Dimensions, or a material One; its both ways better separate, on great and provoking Disagreements, that the Body may escape to the Land of Inactivity. As to Eternal Life, without Revelation, our Natures could never have been thought to have deserved, nor able to endure to Eternity, without a better Concord than Soul and Body had here. The Gift to measure by this Rule, must have been still a greater Punishment. And if chang'd, (1 Cor. xv.) the Happiness is of another Being. I am therefore as a Traveller and Sojourner on Earth, fond of the Alternative of Life and Death, like Waking and Sleeping, as better fitting our Compounds, and thus Voyage it through the Stars; every Change still bringing more and more Salubrity suited to their several Glories.

Again, *Seeds* of Plants or Animals have no Priority in that Existence, both insensible and at rest, their Happiness: The Qualifications arising of Difference and Pre-eminence in their Growth is Accidental, the Effect of Extention; and cannot be more worthy than the Principle they flowed from, the Seed; which we are sure is stable and eternal: *One Generation passeth away, and another cometh, but the Earth endureth for ever.* (Eccles. i.)

A multitude of Maggots frequently seen breeding in warm Countries from large amputated Wounds, discharging a new *Æquivocal* Generation every Day; have their Life from a Defect of our Compound at the Part, and can be no worthier than the parent Corruption they spring from, in my Sight worse. Worms and Wevils also, that in hot Climates our Bread and Peas are ever subject to, are not looked on by Sailors the better Being; casting them away contemptuously, as proceeding from a Decay of the Vital Vegetative Principle in those Species, which while good had much the Priority. A Matter of Humiliation, lest ourselves, if we travel with Reason alone, may be no more in Dignity compared with the whole Earth, than such Insects are compared with the *whole* Man. Pointing out either our being mistaken concerning this Globe, her Powers which may be in Animation, or an

an Intelligence to preside and govern in her the same thing; or that there is something in the Inactivity of Matter (so called) that infinitely surpasses our Comprehension; our Animation not possibly being that Excellency we imagine compared with the Business of this, or any Sphere.

First, We have no clear Conception to the contrary of this Sensation, but that some Parts of her may possibly have the Faculty of thinking. Others as necessary laying in respect to these, as Limbs do in respect to the thinking Substance within us, which may remain whole and sound, when they are out of Repair or lost.

Secondly, What Reason can be given, why Will and Understanding should belong to nothing but Brain? and if so, how Angels and Spirits come by such Powers? a more inconceivable Thing, than lodging them in Parcels of Matter; Hills and Mountains, Groves and Woods---
“ fit haunt of Gods. Millions of spiritual Creatures walk the Earth; and others far surpassing them, inform the Mass, animatum mundus ac Demonibus plenum, who may possibly change their Seats, a Likeness to human Mortality, after having been Ages, according to ancient Opinion, the Tutelar Deities, Genius's, or Guardian Angels of Kingdoms. It is no good Argument against such Residence, that we cannot conceive the manner how, since we are the same Strangers to that thinking Faculty within ourselves; nor may the neighbouring Earths of these superior Spirits be deemed useless, any more than Toes, Fingers, Limbs, or Muscles of our own Bodies; though, their happiest Participation in that Affinity, lays in being free from Pain, a total Rest, or least Motion. Sen-nertus imagined an Intelligence governed the Increase of Fossils; if so, why not some incomprehensible Sense and Pleasure in growth when in their proper Beds? Some have made them, and several Vegetables, Male and Female intimaing this Purpose. And in Shell-fish, Frogs, Snails, and some other Animals, Fœcundation proceeds from a Mixture of their Seed spilled, that evidences to our Sense no pleasure, though very probably there is in all Propagation, animate or vegetative.

Thirdly, By this we assume to ourselves, the Vanity of the perfectest Being in this visible immeasurable Creation; because

because if Perfection of Being lays in thinking, then to our sensitive Souls, there is nothing superior.

Lastly, If we cannot perceive by our present Faculties, any Signs of similar Sensation and Knowledge in the Spheres, particularly our own Globe, with which we hold the nearest Intelligence; yet by giving (or sustaining) such Powers in millions of Creatures; she does, without some such Supposition, give (contrary to the Maxim) *what she has not*. So that were the Proofs more demonstrative against this Sensation, they would only at the same Time demonstrate, what has been above observed of Inactivity to be the superior Happiness; for what is thus acknowledged so to the whole Universe, its unreasonable to think should not be so to the Creatures.

The Conclusion I would draw from this, and Arguments of the like Stamp; is advising all (as far as I can influence) who wish for Immortality, to cast their Sheat-Anchor on Revelation; without that the Earth only seems ours: What I think may strongly incline us to so pious and humble Resignation, is the doubtfulness of Immortality among Philosophers; who have argued *pro* and *con* from the beginning of the World, without a full Decision: Intimating the Subject too hard for humane Understanding, and the Necessity of an infallible Sentence from Heaven to clear it up; and which, secondly, in these latter Days is really come to pass, in so sublime and wonderful manner, in respect to Doctrines and Progress, as speaks it too stupendious for Man's Device without Inspiration. In the lowest Consideration of the Gospel Precepts, their Tendency (where properly encouraged) to make Men happy, by instructing them how to become good Subjects, Parents, Friends, &c. makes it every wise Man's best Choice, to cherish, promote, and even suffer for, when called upon. Not those corrupt maggoty Sorts in Disunity, (I do not mean) destructive of all Morality, and as nauseous as Worms in humane Bodies; but to one and the same People, one Faith, one Baptism, and one Lord Jesus Christ.

F I N I S.



T H E I N D E X.

		Page
A		
<i>CID, Alkali</i>	337	
<i>Action, how to prepare</i>	148	
<i>Air and Æther</i>	11	
<i>Aix le Chapelle</i>	334, 338	
<i>Amputations</i>	118	
<i>Animation</i>	374	
<i>Antimony</i>	292	
<i>Astringents</i>	123, 164, 236	
<i>Articulations</i>	94	
B		
<i>Bandages, 18 Tail</i>	60	
<i>other Sorts</i>	154	
<i>Bath Springs</i>	339	
<i>Use and Vertue</i>	341	
<i>Bathing</i>	342	
<i>in the Sea</i>	349	
<i>Bellost's Pill</i>	253	
<i>Bleeding</i>	184	
<i>when proper</i>	185	
<i>to what Quant.</i>	186	
<i>Opinions</i>	187	
<i>Danger</i>	120	
<i>Judgment</i>	162	
<i>Experiments</i>	193	
<i>Bodies, their primary and secondary Qualities</i>	16	
<i>Booth's Case</i>	250	
<i>Burns</i>	176	
C		
<i>Callus</i>	51	
<i>Cauteries</i>	120	
<i>Ceratum Gal.</i>	202	
<i>Chicos</i>	371	
<i>Chilblanes</i>	272	
<i>Colica Pictonum</i>	355	
<i>Colours</i>	15	
<i>Corns</i>	271	
<i>Cupping</i>	181	
D		
<i>Deligation of an Artery</i>	122	
<i>Diarrhæa</i>	361	
<i>Diet-Drinks</i>	246	
<i>Dressings to a Stump</i>	125	
<i>Dysentery</i>	361	
E		
<i>Effluvia's</i>	8	
<i>Emulsions</i>	234	
	<i>English</i>	

I N D E X.

	Page		Page
<i>English Springs</i>	314	H	
<i>Enthymeme</i>	8		
<i>Exfoliation</i>	128	<i>Hearing</i>	9
<i>Extraction</i>	64	<i>Heat, how created</i>	336
		<i>Hernia Ventosa</i>	209
F		<i>Aquosa</i>	210
<i>Feeling</i>	5	<i>Carnosa</i>	213
<i>Fractures in General</i>	38	<i>Varicosa</i>	ib.
their Signs	40	<i>Hot Baths</i>	333
Cure	41	<i>Hospital St. George</i>	305
of the Fingers	52	<i>Hotel Dieu</i>	301
Cubit	53		
Shoulder	ib.	I	
Clavicle	55	<i>Illapsis in Aquis</i>	269
Leg	56	<i>Infirmaries</i>	298
Thigh	ib.	<i>Injections</i>	234, 238
<i>Fractures Compound</i>	63	<i>Issues</i>	178
of the Leg	69		
Thigh	71	K	
Cubit	72		
<i>Fractured Skulls</i>	75	<i>Kibes</i>	272
		<i>King's-Evil</i>	21
G		Method of Cure	22
<i>Ganglion</i>	270	Salivation	25
<i>Gargarism</i>	246	Topicks	ib.
<i>Glutinous Diet</i>	52	Joint Swellings	27
<i>Guiney Coast</i>	351	Royal Touch	32
Obstacles	352		
Air	353	L	
Sickness	355	<i>Leaches</i>	182
Cure	359	<i>Light</i>	14
<i>Greatrakes</i>	34	<i>London Infirmary</i>	301
<i>Gunshot-Wounds</i>	137	<i>Lotions</i>	238
penetrating	138	<i>Lues Venerea</i>	222
inward Canthus	142	<i>Luxations</i>	94
Neck	143	of the Rib	97
temporal Muscle	146	Vertebrae	98
		Neck	99
		Jaw-Bone	101
		Shoulder	102
		Thigh	

I N D E X.

	Page		Page
Thigh	106	<i>Punctum aureum</i>	207
Elbow	109	<i>Purges</i>	232, 245
Knee	111		
Wrist	112	R	
Ankle	114		
Thumb	116	<i>Reflection</i>	17
Fingers	ib.	<i>Refraction</i>	18
		<i>Rotation of the Earth</i>	375
M		<i>Ruptures</i>	195
		Parts concern'd	197
<i>Matters Subtily</i>	9	Sorts	200
<i>Mercury</i>	231, 255	<i>Ruptures Intestinal</i>	202
<i>Milks</i>	23	Omental	203
<i>Mineral Springs</i>	312	Prognostic	202
<i>in England</i>	315	Prescriptions	204
<i>their Principles</i>	317	Reduction	205
<i>Use</i>	328	in Scroto	209
<i>Vertue</i>	331		
<i>Mortification</i>	151	S	
<i>Cure</i>	153		
N		<i>Salivation</i>	239
		Examples	241
<i>Negro Distempers</i>	363	<i>Sarcocoele</i>	213
<i>Colour</i>	367	<i>Scars</i>	146
		<i>Scarborough Spaw</i>	327
O		<i>Scalds</i>	176
		<i>Sensation</i>	I
<i>OEdematous Tumors</i>	54	<i>Seton</i>	180
<i>Ol. Tereb.</i>	119	<i>Sleepy Distemper</i>	365
<i>Operation of Dismembring</i>	123	<i>Smelling</i>	8
P		<i>Sound</i>	11
		<i>Spa</i>	313
<i>Penetrating Wounds</i>	138	<i>Spaw Whey</i>	329
<i>Pneumatocele</i>	209	<i>Sponge Tents</i>	74
<i>Poisons</i>	322	<i>Sprains</i>	116
<i>Potestates</i>	16	<i>Stephens's Medicine</i>	35
<i>Pox, the Symptoms</i>	239	<i>Stiching Wounds</i>	164
<i>Prolapsus Uteri</i>	219	<i>Suffumigation</i>	252
<i>Ani</i>	220	<i>Synovia's</i>	120

Tasting

I N D E X.

T		W	
	Page		Page
<i>Tasting</i>	7	<i>Waves, their Motion, and</i>	
<i>how lost</i>	8	<i>Proportion to Sound</i>	11
<i>Tents</i>	73	<i>Water, how tried</i>	318
<i>Testicle extirpated</i>	215	<i>White Swellings</i>	26
V		<i>Winchester Infirmary</i>	306
<i>Venesection</i>	184	<i>Wine, Observations</i>	319
<i>Venereal Disease</i>	222	<i>Workhouses</i>	300
<i>Vertues of Mineral Springs</i>	317	<i>Wounds penetrating</i>	138
<i>Verrucæ</i>	271	<i>the Thorax</i>	<i>ib.</i>
<i>Vinum Stomachic.</i>	48	<i>Abdomen</i>	166
<i>Purgativ.</i>	48	<i>Wounds in General</i>	160
<i>Vision</i>	12	<i>of the Tendon</i>	161
<i>Volvulus</i>	259	<i>Arteries</i>	165
<i>Vulneraries</i>	170	<i>by Puncture</i>	166
		<i>Viscera</i>	166
		<i>Urethra</i>	171
		<i>Gula</i>	<i>ib.</i>
		Y	
		<i>Yaws</i>	370



ERRATA.

Page.	Line.	Read.	Page	Line	Read.
51	23.	_____ or luxuriancy	276	11.	_____ few or none
59	7.	_____ -- dele to	280	19.	_____ Defensative
62	10, 38.	dele as--tortening		26.	_____ to be worne
81	26.	_____ helped on	289	4.	_____ balloo
83	9.	_____ to vent	307	19.	_____ dele othe
84	10.	dele meeting or	309	31.	_____ and discipline
95	ult.	_____ of frequent luxation	313	19.	_____ five Shillings
121	35	_____ sanguinem	215	30.	_____ Flushings
122	12.	_____ contact	317	6, 7.	_____ nomine -- vale
162	2, 28.	---cassor---rez. Jalap	318	29.	_____ Sacchar. Sat.
169	29.	_____ procuring		31.	dele p. 171, 172.
172	9, 10.	from the navel--marking	321	22.	_____ precipitating
170	_____	Genista -- Bugloss	323	1.	_____ 31.
		petroselina	324	26.	_____ dele is
173	9.	_____ for dry--empty		27.	_____ Gentlemen
210	6.	_____ Ovilis	326	3.	_____ wapid
215	31, 35.	---Chin---for lex. les.	329	37.	_____ Betony
	33.	_____ Becabung	330	5.	_____ Vitriol
216	26.	_____ reposito		ult.	_____ dele for
237	4, 34.	_____ Paraphimosis	331	6.	_____ nauseas
256	21, 38.	---Æthiops---Angina		20.	_____ Strangury
263	2, 15.	---Refectiōns---Ease	332	39.	_____ natural
269	14.	_____ potentius	338	20.	_____ with, at
271	19, 23.	---ppt. ---portulaca	344	22.	_____ juvenility
275	1.	_____ with the good	348	18.	_____ continue the reading

*BOOKS Printed for J. Hodges, at the Looking-Glass
opposite St. Magnus Church, London-Bridge.*

I. **O**BSERVATIONS in Surgery: Being a Collection of Two Hundred and Forty Three different Cases, with particular Remarks on each, for the Improvement of Young Students. Also, the particular Receipts of such Remedies, as were used by the Author in each Case. Vol. I. Containing principally such Cases as relate to the Male Sex. Vol. II. The Method of Practice in difficult Labours, and other Distempers incident to the Female Sex, are copiously enlarged on. Embellished with Copper Plates curiously engraved, representing those Parts where the principal Cases are particularly concerned. To which is added, A New Chirurgical Dictionary, for the Use of Young Practitioners and Gentlemen residing in the Country; explaining the Terms of Art contained in the Body of Surgery. Written Originally in French by Henry Francis le Dran, Eldest Surgeon and Demonstrator of Anatomy at the Hospital la Charite, and Mr. Saviard, Chief Surgeon and Operator in Midwifry, at the Hospital Hotel Dieu in Paris. Translated by J. S. Surgeon. Neatly printed in Two Volumes, 8vo. Price bound 9s.

II. A Treatise on the Power of Medicines, by the late learned Herman Boerhaave, Doctor of Philosophy and Physick, and Professor of Physick, Botany and Chymistry in the University of Leyden. Translated from the most correct Latin Edition, by John Martin, F. R. S. 8vo. Price 5s.

III. The whole Works of Dr. Archibald Pitcairn, published by himself. Wherein are discovered, the True Foundation and Principles of the Art of Physick. With Cases and Observations upon most Distempers and Medicines. Done from the Latin Original by George Sewell, M. D. and J. T. Desaguliers, L. L. D. and F. R. S. With some Account of the Author. The Second Edit. 8vo. Price 1s. 6d.

IV. Dr. Sydenham's Compleat Method of curing almost all Diseases, and Description of their Symptoms. To which is now added, Five Discourses of the same Author; concerning the Pleurisy, Gout, Hysterical Passion, Dropsy and Rheumatism. Translated from the Original Latin, 7th Edit. Corrected. Price 1s. 6d.

V. Memoirs of the Royal Society; being a New Abridgement of the Philosophical Transactions. By Mr. Baddam. Illustrated with great Variety of Cuts. In Two Volumes 8vo.